

# **TOWING SAFETY ADVISORY COMMITTEE (TSAC)**

DEPARTMENT OF TRANSPORTATION

UNITED STATES COAST GUARD

Minutes of Meeting held  
Monday, April 30, 2001  
U.S. Coast Guard Headquarters  
Washington, DC

## **ATTENDEES**

### **Coast Guard Staff:**

- + CAPT Peter A. Richardson; Chief, Office of Operating and Environmental Standards (MSO); Executive Director
- + Mr. Gerald P. Miente; Office of Operating and Environmental Standards; (G-MSO) Assistant Executive Director
- + Mr. Robert Spears; Office of Standards Evaluation and Development (G-MSR)
- + Mr. Randy Eberly; Office of Design and Engineering Standards (G-MSE)
- + Mr. Allen Penn; Office of Design and Engineering Standards (G-MSE)
- + LCDR Lance Lindsay; Office of Operating and Environmental Standards; (G-MSO)

### **Committee Members:**

- \* Mr. Jeff Parker; Vessel Operations Manager, Allied Transportation Co.; TSAC Chairman
- + Ms. Laurie Frost Wilson; President, Laurie Frost Wilson, Attorney at Law; Working Group Chair
- \* Ms. Cathy S. Hammond; President, Inland Marine Service
- \* Mr. Mario A. Muñoz; Risk Analyst, American Commercial Barge Line
- \* Ms. Diane Goncalves; Government Relations Rep., Transportation Institute
- \* Mr. James G. Daley; Operations Manager (Contracts), Crowley Marine Services
- + Ms. Jennifer A. Kelly; Senior Vice President, American Waterways Operators
- \* Mr. James C. DeSimone; Vice President, Great Lakes Towing Co.
- \* Mr. Rex H. Woodward; President, Premier Marine, Inc.
- \* Ms Marina V. Secchitano; Regional Director, Inland Boatman's Union of the Pacific

( + ) In Person

( \* ) Via Teleconference

The Coast Guard hosted a public meeting of the Towing Safety Advisory Committee at USCG Headquarters, Washington, DC on April 30, 2001, at 1400. The session followed a notice published in the Federal Register on Monday, April 16, 2001, (FR 66 19586). The meeting was held for the express purpose of receiving recommended comments (**Enclosure 1**) from its Working Group on Fire Suppression and Voyage Planning, and for the Committee's deliberation, possible amendment, and final vote to submit them to the Coast Guard rulemaking docket on the Supplemental Notice of Proposed Rulemaking on Fire Suppression Systems and Voyage Planning for Towing Vessels (USCG-2000-6931). These comments were prepared based on discussions that took place at two working group meetings held on March 14, 2001 and April 4, 2001. Because of the time criticality to meet the deadlines established in the rulemaking, teleconferencing equipment was used to accommodate those members of the Committee, Working Group on Fire Suppression and Voyage Planning, and the public, who were unable to be present at U. S. Coast Guard Headquarters.

Captain Richardson opened the meeting by announcing that there were 10 Committee members in attendance, which constituted more than the required number of members for a quorum, and that comments from the public, when requested, would be limited to one minute each. He then turned the meeting over to the Committee's Chairman, Jeff Parker.

## ***Order of Business***

Mr. Parker introduced the subject Working Group Report and called for a preliminary straw vote as a test of the Committee's initial reaction to the report as it was drafted.

After a confirming roll call by the WG Chair, the vote showed 8/2 in favor of accepting the draft comments as written; Ms. Kelly and Ms. Secchitano dissenting. Ms. Kelly proceeded to present her particular objections to several issues in the draft. Her major concern was the applicability of the rulemaking to inland towing vessels.

Acknowledging that the draft comments already opposed the requirement for fixed fire suppression systems on existing towing vessels, she stated that she supported fire suppression systems on new coastal towing vessels, but opposed mandatory fixed systems on new inland vessels; claiming that each towing company should choose for itself the manner in which it would protect its vessels. Ms. Secchitano disagreed by pointing out that a vessel might be built for one service, but could later be used for another. Ms. Secchitano also opposed the exemption of existing towing vessels from the requirement for mandatory fixed fire suppression systems.

Mr. Parker commented that the casualty data presented in the rulemaking does not demonstrate the need for fixed fire suppression systems, nor will the requirement for them provide increased safety for "inland vessels", thereby calling for the Committee's discussion on the meaning of "inland" relative to such fixed systems. He asked if the definition includes the Western Rivers or just lakes, bays and sounds. Ms. Secchitano again commented, for the record, that vessels have long service lives and often operate on a variety of routes. In an attempt to allay the apprehension of others, i.e., that activating a fixed system could render the engines useless and put the vessel in further danger, she

noted that properly trained crews would use fixed systems only as a last resort. A member of the public, Mr. Nelson Jones, of Madison Coal and Supply, a company operating on the Western Rivers, spoke against using a fixed system to shut down an engine room while the tow was in a precarious situation, and that retrofitting existing vessels or requiring new vessels to install them is a serious matter of economics.

Further discussion led to the following motion:

1. Motion (Mr. Parker), Seconded (Ms. Kelly), that Harbor Assist vessels, as defined in the draft proposed NVIC entitled “Licensing and Manning for Officers of Towing Vessels,” be exempt from Voyage Planning and Fire Suppression requirements; Carried by a vote of 10/0.

After discussion on Western Rivers and canals, on the Gulf and Atlantic Intercoastal Waterways and, comments by Mr. John King, Gulfcoast Transit, favoring fixed systems on inland vessels:

2. Motion (Ms. Kelly), Seconded (Mr. Woodward) that new towing vessels operating solely on inland rivers and canals, NOT be required to install fixed Fire Suppression systems (adding this to the current recommendation against EXISTING vessels being retrofitted); Carried by a vote of 8/2; Ms. Secchitano and Mr. Daley opposed.

The discussion then turned to Voyage Planning issues. Ms. Kelly reiterated that the mandatory voyage planning requirement gives no value added for Harbor Assist and inland towing vessels operating both on rivers and canals.

3. Motion (Ms. Kelly), Seconded (Ms. Hammond) that vessels engaged or operating exclusively on inland rivers and canals NOT be subject to the Voyage Planning requirements (recognizing that Harbor Assist vessels already are being excluded; as are Fleeting Duties, Operations in Limited Geographic Areas, towing vessels engaged in pollution response, and Assistance Towing).

Discussion ensued concerning the different types of “inland” operations, and the value added for the proposed requirements on harbor or river “voyages” that are not clearly defined, such as when a boat is constantly dropping off and taking on barges. Ms. Secchitano pointed out that the Committee continually hears about the uniqueness of rivers, the special experience necessary for operators who pilot these routes, and the serious conditions that can exist on the Western Rivers, and that voyage planning, particularly in the form the SNPRM suggests, is not too burdensome, but appropriate and necessary. Ms. Kelly stated that TSAC is about safety, and that no one has brought forth casualty data that would show that this provision would enhance safer operations on inland rivers and canals. She suggested that the case for safety enhancement on inland and Western Rivers has not been convincingly made and that these issues are better discussed in a NVIC, rather than being made regulatory requirements.

Mr. Parker suggested that the original motion, with its inclusion of “rivers” might be revised to “Western Rivers,” as voyage planning should be applicable to other rivers. Using the 33 CFR 164.70 definition of “Western Rivers,” Ms. Kelly amended the motion replacing “rivers and canals” with “Western Rivers.”

Mr. Daley expressed concern that, at its last public meeting on March 15, 2001, at Coast Guard Headquarters, the Committee vote (9/6 in favor of voyage planning for inland operators) confirmed that the consensus favors voyage planning as something *every* prudent master engages in. He believed that the only real task was to clarify what exactly constitutes a “voyage” in each case.

Mr. Parker reminded everyone that TSAC’s original advice stated that all voyage planning was initially meant to be treated in a NVIC. Now that the issue is caught up in a combined regulation with fire suppression, perhaps a voyage planning **regulation** might be appropriate for coastwise and deep-sea boats, where only a **NVIC** would be necessary for the inland trade.

Mr. Parker asked Ms. Kelly to restate the motion. Ms. Kelly amended it to read: that voyage planning NOT be required on towing vessels operating exclusively on Western Rivers (others being previously excluded as above). It was seconded again by Ms. Hammond and was defeated by a vote of 5/5, with Ms. Wilson, Mr. Daley, Ms. Goncalves, Mr. DeSimone and Ms. Secchitano opposed. The motion failed for lack of a simple majority needed to successfully carry the motion.

Ms. Kelly suggested that the vote counts be included in the final comments sent to the Coast Guard. There was opposition to this, but Capt. Richardson and Ms. Wilson confirmed that, according to Robert’s Rules of Order, dissenting votes are frequently noted in, and minority opinions are often made part of, Committee reports.

## **Conclusion**

Mr. Parker called for a final vote on the comments of the Working Group on Fire Suppression and Voyage Planning dated April, 30, 2001, as written by Ms. Wilson, regarding the Supplemental Notice of Proposed Rulemaking on Fire Suppression and Voyage Planning for Towing Vessels, with the specific amendments approved as described above (i.e., to exclude Harbor Assist from both Fire Suppression and Voyage Planning; and to exclude new towing vessels on inland rivers and canals from required Fire Suppression systems). The motion passed by a vote of 9/1; Ms. Secchitano opposed and promised to submit a minority opinion.

The draft comments presented at this meeting would be finalized and forwarded to the Coast Guard docket by Mr. Parker, and the report would indicate the vote count for each

motion item. Ms. Wilson agreed to distribute the final comments to all Committee members the next day.

The meeting adjourned at 1547.

(Signed) P. A. Richardson

Captain Peter A. Richardson  
Executive Director

5/10/01

Date

(Signed) Jeff E. Parker

Mr. Jeff Parker  
Chairman

5-22-01

Date

- Encl: (1) Report of the Working Group on Fire Suppression and Voyage Planning  
(Draft Recommendations for TSAC Comments to the SNPRM Docket)
- (2) Final TSAC comments to the SNPRM Docket

# Towing Safety Advisory Committee

Jeffrey E. Parker

**Chairman**

Allied Transportation Company

**P.O. Box 717**  
Norfolk, Virginia 23501

April 30, 2001

Docket Management Facility  
U.S. Department of Transportation (DOT)  
Room PL-401  
400 Seventh Street, S.W.  
Washington, D.C. 20590-0001

Re: **USCG-2000-6931**  
**Supplemental Notice of Proposed Rulemaking**  
**Fire-Suppression Systems and Voyage Planning for Towing Vessels**

Dear Sir or Madam:

The Towing Safety Advisory Committee ("TSAC") submits the following comments on the Supplemental Notice of Proposed Rulemaking, **"Fire-Suppression Systems and Voyage Planning for Towing Vessels,"** 65 Federal Register 66,941 (Nov. 8, 2000) ("SNPRM"). TSAC's Working Group on Fire Suppression and Voyage Planning, which in various forms has been involved with all of the rulemaking initiatives arising from the *Scandia/North Cape* oil spill in 1996, developed these comments. We have divided these comments into two sections: The first addresses the portion of the SNPRM dealing with Voyage Planning and the second addresses the portion of the SNPRM dealing with Fire Suppression.

## **I. VOYAGE PLANNING**

TSAC notes that, with certain exceptions, the SNPRM incorporates many of the suggestions made by TSAC in previous reports or input provided to the project managers. We also note that the SNPRM does not allow towing companies as much flexibility in determining how to implement the voyage planning requirement, in that the rulemaking appears to make consideration of all listed categories of information in proposed Section 164.80(c) mandatory. TSAC believes that a voyage plan should consider all of the categories of information even if a company recognizes that for any particular voyage or trip some of the required considerations might not apply. We discuss this issue further below.

TSAC's comments on voyage planning address seven sub-topics: (1) applicability of the voyage planning requirements to inland operators; (2) whether it should be mandatory to consider all of the categories of information included in proposed Section 164.80(c)(1) through (9); (3) whether the voyage plan must be a written document; (4) the definition of a "voyage," particularly as applied to inland towing vessels; (5) the duty to consider "environmentally sensitive areas" in formulating a voyage plan; (6) the definition of "substantial deviation"; and (7) elimination of the 12-hour threshold for application of the voyage planning requirement.

## **A. Applicability**

The applicability of the voyage planning requirement to inland towing vessel operators has engendered considerable controversy among TSAC members. In proposed Section 164.80, the SNPRM requires the owners, operators and masters of all towing vessels employed to tow a barge to undertake voyage planning at the start of any voyage of 12 hours or more:

(c) The owner or operator, and the master, of each towing vessel employed to tow a barge or barges must ensure the development of a voyage plan for each intended trip or voyage with the barge or barges, on the navigable waters of the United States, as defined in 33 U.S.C. 1222(5). The voyage plan must take into account all pertinent information, and be complete before the vessel embarks on a trip or voyage of more than 12 hours. The master must check the planned route for proximity to hazards and known environmentally sensitive areas (noted on charts or maps) before the trip or voyage starts. During a trip or voyage, if anyone in authority decides to deviate substantially from that route, then the master or mate must ensure the development of a plan for the new route before the vessel does deviate from the plan for the current route.

Some TSAC members have expressed the concern that the requirements of proposed Section 164.80(c) already are mandated by one regulation or another and questioned why we need a new requirement at all. At the same time, representatives of inland operators acknowledged that their companies already take most or all of the categories of information in proposed Section 164.80(c) into account.

The consensus of TSAC is that, with some further elaboration and detail provided in a Navigation and Vessel Inspection Circular ("NVIC") as to how the Coast Guard will apply the voyage planning requirement on a geographic or regional basis, TSAC should support the applicability of the voyage planning requirement to inland operators. TSAC arrived at this consensus by a vote of 9 to 6 at its March 15, 2001 meeting, albeit with continuing opposition by a substantial minority of members. There is no dispute that the Coast Guard should apply the voyage planning requirement to coastal operators.

With due respect to the minority position taken by some of our members, TSAC recommends that, to clarify the applicability of the voyage planning requirement, the explanation currently provided on page 66942 of the preamble to the SNPRM as to which towing vessels are exempted from the voyage planning requirement should be incorporated into the regulatory text

of proposed Section 164.80(c) so that operators may avoid any conflicts in interpretation by field inspectors and boarding officers. Our recommendation is as follows **[new text is in italics]**:

(c) The owner or operator, and the master, of each towing vessel employed to tow a barge or barges, *except a towing vessel engaged in assistance towing, pollution response, or fleeting duties in limited geographical areas*, must ensure the development of a voyage plan for each intended trip or voyage with the barge or barges, on the navigable waters of the United States, as defined in 33 U.S.C. 1222(5). The voyage plan must take into account all pertinent information, and be complete before the vessel embarks on a trip or voyage . . .

## **B. Section 164.80(c)(1) – (9) Categories of Information**

The SNPRM provides that each voyage plan “must consider” (emphasis added) the following:

- (1) Applicable information from up-to-date nautical charts and publications including Coast Pilot, Coast Guard Light List, and Coast Guard Local Notice to Mariners for each port of departure and for each port of call (destination);
- (2) Current and forecasted weather, including visibility, wind, and sea state from each port of departure to each port of call;
- (3) Data on tides and tidal currents for each port of departure and destination, as well as for ports of call, and on river stages, with forecasts, if applicable;
- (4) Forward and after drafts of the areas;
- (5) Appropriate pre-departure checks;
- (6) Calculated speeds and estimated times of arrival at proposed waypoints;
- (7) Communication contacts at Vessel Traffic Services (if applicable), bridges, and facilities, and port-specific requirements for VHF radio;
- (8) Any standing orders (for instance, closest points of approach, special conditions, and critical maneuvers); and
- (9) Whether the vessel has sufficient power to control the tow under all foreseeable circumstances.

TSAC believes that the words “must consider” imply a mandatory obligation to consider and document all categories of information listed above, whether such information is relevant or not to the planned voyage or trip. While there was much discussion within TSAC about whether “must consider” means mandatory, we believe that the intent of the regulation and the position of TSAC in not having a “one size fits all” regulation is better served by changing “must consider” to “should consider, as appropriate.” TSAC also recommends retention of the mandatory nature

of the language requiring the owner, operator and master to prepare a voyage plan (i.e., master “must ensure the development of a voyage plan”).

### **C. Whether the Voyage Plan Must Be a Written Document**

TSAC notes that the SNPRM does not require the preparation of a written or formal voyage plan. In this instance, the SNPRM allows each company the flexibility to determine whether some kind of written voyage plan or other documentation (such as a voyage planning checklist) is needed to ensure its ability to prove compliance with the regulatory requirement. Some members of TSAC have expressed the position that a written document is essential and is the only way to prove that the master has prepared a voyage plan, but the majority of TSAC members are comfortable with preparation of a voyage plan that is not written. We recognize that it may be difficult after an incident already has occurred to prove the existence of a voyage plan if not in writing, but that companies should decide for themselves how to best comply with the voyage planning requirement. This is in keeping with previous recommendations of TSAC that the Coast Guard should not require formal written policies or documents. Therefore, TSAC recommends that the Coast Guard explicitly acknowledge in the regulatory text that a separate written voyage plan is not required. Our recommendation is as follows [**new text is in italics**]:

#### **§ 164.80 Tests, inspections, and voyage planning.**

\* \* \*

(c) \* \* \* The voyage plan, *which need not be a separately written document*, must take into account all pertinent information, and be complete before the vessel embarks on a trip or voyage . . .

In addition, it is not clear whether Section 164.78(b), as currently codified, would require the fact that a voyage plan has been prepared -- in whatever form -- to be logged in the vessel's logbook or other record carried on board the vessel. Section 164.78(b) currently refers to “inspections and tests required by § 164.80” that must be logged. Voyage planning obviously is not an inspection or test, but it is unclear whether the generic reference to “§ 164.80” in Section 164.78(b) would include voyage planning once a final rule requiring voyage planning is adopted. This must be clarified.

### **D. Definition of “Voyage”**

There have been a significant number of questions about just what is a voyage, especially when undertaken on inland rivers where the means to differentiate between the end of one voyage and the start of another is not always obvious. TSAC recommends that a definition of “voyage” be developed with respect to geographic areas or types of towing operators or operations and discussed in the NVIC that the Coast Guard anticipates developing next, once the rulemaking is in place.

## **E. Consideration of “Environmentally Sensitive Areas”**

The SNPRM provides that the master must check the planned route for proximity to hazards and “known environmentally sensitive areas” (noted on charts or maps) before the trip or voyage starts. TSAC is concerned that the reference to “(noted on maps and charts)” may be too vague. For instance, Area Contingency Plans developed under the Oil Pollution Act of 1990 may contain maps of environmentally sensitive areas; however, not all towing vessel operators are involved in the transportation of oil and petroleum products and therefore would have no cause to consult these maps or, in fact, have any knowledge of their existence. TSAC recommends that only those typical nautical charts and maps that a mariner generally consults to determine the existence and location of known hazards to navigation, and which are required to be on board the vessel, must be considered by the master. By making this recommendation, TSAC does not wish to imply that the master should omit consideration of environmentally sensitive areas if known to that master. But this information should not be included in the “one size fits all” laundry list of information that must be considered in voyage planning unless those areas are designated on the specific maps and charts the master is required to consider.

Further, since proposed Section 164.80(c)(1) already incorporates a requirement for the master to consider applicable information from nautical charts and publications, TSAC recommends that a reference to “paragraph (1) below” be added after the parenthetical “(maps and charts)” and that the language “and known environmentally sensitive areas” be deleted. This will ensure that masters are not penalized for failing to consider maps and/or charts that they did not know even existed and otherwise would have no reason to know. TSAC also recommends that a cross-reference to those existing provisions in the current regulations which require current charts and maps (i.e., Sections 164.33 and 164.72, as applicable) be included in the regulatory text.

Our recommendation is as follows [**new text is in italics; deleted text is struck through**]:

\* \* \*

(c) \* \* \* The master must check the planned route for proximity to hazards ~~and known environmentally sensitive areas~~ (noted on charts or maps *required to be consulted by paragraph (1) below*) before the trip or voyage starts. During a trip or voyage, if anyone in authority decides to deviate substantially from that route, then the master or mate must ensure the development of a plan for the new route before the vessel does deviate from the plan for the current route. Each plan must consider—

(1) Applicable information from up-to-date nautical charts and publications including Coast Pilot, Coast Guard Light List, and Coast Guard Local Notice to Mariners for each port of departure and for each port of call (destination), *as required by either § 164.33 or § 164.72, as applicable; . . .*

## **F. Definition of “Substantial Deviation”**

TSAC members have discussed whether additional explanation of what is considered to be a “substantial deviation” is needed, but we recommend retaining the regulatory language as is currently proposed concerning deviations and the need to prepare a new voyage plan for the deviated route. If additional explanation is needed, TSAC recommends that it be included in the voyage planning NVIC.

### **G. 12-Hour or More Voyages**

TSAC questions the justification for applying voyage planning only to vessels on voyages of more than 12 hours. Some voyages even shorter in length may be considered more hazardous and risky than voyages lasting 12 hours or more. TSAC recommends that the reference to voyages over 12 hours be deleted, as follows **[deleted text is struck through]**:

#### **§ 164.80 Tests, inspections, and voyage planning.**

\* \* \*

(c) \* \* \* The voyage plan must take into account all pertinent information, and be complete before the vessel embarks on a trip or voyage ~~of more than 12 hours~~.

### **H. Clarification of Interface with First District Rule**

In December 1998, the Coast Guard published a Final Rule establishing a Regulated Navigation Area (“RNA”) for all navigable waters within the First Coast Guard District (63 Federal Register 71,764; Dec. 30, 1998). The Final Rule imposes a duty on operators of towing vessels towing tank barges within the waters of the First Coast Guard District to engage in voyage planning. This requirement now is codified at 33 C.F.R. § 165.100(d)(3). The SNPRM does not specify whether the voyage planning requirement proposed for § 164.80(c) is intended to supersede or complement the voyage planning requirement in place in First District waters. The interaction between the SNPRM and the RNA vis-à-vis voyage planning must be clarified. TSAC recommends that the Coast Guard clarify that the SNPRM would supersede the voyage planning requirement in the RNA.

## **II. FIRE SUPPRESSION**

The SNPRM substantially changes the direction and approach of the Notice of Proposed Rulemaking, which was published in 1997 (62 Federal Register 52,057; Oct. 6, 1997) (“NPRM”). The NPRM proposed fire suppression measures for all towing vessels, but did not require the mandatory installation of a fixed fire suppression system. Instead, the NPRM proposed allowing the installation of manual alternatives comprised of fire detection systems, semi-portable fire extinguishers, training of crewmembers, and fixed or portable fire pumps. The

NPRM proposed The SNPRM now rejects completely the manual system approach and mandates that all new and existing towing vessels (not just those new vessels of 24 meters or more in length) have a fixed fire suppression system installed. There is no distinction between new and existing vessels; in size of towing vessels; or in types of barges or cargoes towed.

TSAC supports requirements that have the real potential to help save lives and prevent personal or property damage. However, any new requirements must be cost-effective and must address a need for which current regulations arguably may be deficient. While we appreciate the statutory directive to consider the requirement for fire suppression systems, we believe the Coast Guard has the flexibility and discretion to adopt other measures that will accomplish just as much if not more than a fixed fire suppression that comes with a very high price tag for each and every towing vessel operator in this country.

As discussed below, TSAC does not support a requirement that a fixed fire suppression system be retrofitted on all existing towing vessels – even with a five-year “grace period.” The Committee does not believe that a fixed fire suppression system will be effective on those towing vessels whose engine room cannot be made airtight. Air tightness is best addressed at the design stage before a vessel is built – not through an undemonstrated retrofitting requirement. Trying to make airtight those engine rooms on existing towing vessels that were designed to have holes and spaces will pose considerable structural design and feasibility difficulties for such towing vessels. In contrast to statements made in the preamble to the SNPRM, TSAC does not believe it is simply a matter of adding more bottles of CO<sub>2</sub> or halon to make up for the lack of airtightness.

The cost and casualty data presented in the Regulatory Assessment, which TSAC also has analyzed, simply do not support the propositions for which the Coast Guard has set forth such data. The casualty analysis does not support a need for mandatory fixed fire suppression systems and the cost data is so faulty that it fails to demonstrate the cost-effectiveness of mandating fixed fire suppression systems. These concerns are addressed further below.

TSAC believes the Coast Guard must step back and re-focus on what a fire suppression system is intended to accomplish. We believe the emphasis should be on dealing with fires in their insipient stage and what equipment is needed to fight any engine room fires at that stage. Given the new equipment requirements now adopted in the Fire Protection Measures, Coast Guard should re-evaluate whether any residual need for a fixed fire suppression system exists, particularly in the face of a lack of compelling casualty data supporting mandatory installation of fixed fire suppression systems, and in the face of cost data suggesting that cost connected with the SNPRM’s mandatory fixed systems will severely outweigh any benefits to be gained from this new requirement.

#### **A. Application**

Although TSAC questions the need and justification for the imposition of mandatory fixed fire suppression systems on existing towing vessels, TSAC does not oppose the requirement as applied to new towing vessels (which should be defined as towing vessels for which the contract for construction is entered into after the effective date of the regulations).

With respect to existing towing vessels, our recommendation is that the Coast Guard revert to the approach included in the NPRM which allows use of manual fire suppression systems

TSAC believes that the application of the fire suppression system requirements to towing vessels involved in ship assist (docking and undocking), fleeting duties, escort duties, and operation in limited geographical areas must be clarified. In particular, TSAC recommends that the definition of “harbor assist” in the licensing NVIC be included in the regulatory text, and that a definition of “new towing vessel”; “limited geographical areas”; and “fleeting duties” likewise be included in the regulatory text. Because a fire suppression system requirement may involve structural alterations and not just operational alterations (as would voyage planning), it is not sufficient to address these definitional concerns in a NVIC left for another day. The towing industry must be certain as to which vessels will require these systems and which will not.

## **B. Justification and Need for Fixed Fire Suppression Systems**

TSAC believes it is important to re-focus on the applicable statutory authority that instigated this rulemaking. The *Coast Guard Authorization Act of 1996* was enacted in response to the SCANDIA/NORTH CAPE oil spill in January 1996. Section 902 of the Act directs the Secretary of Transportation, in consultation with TSAC, to prescribe rules on fire suppression systems or other measures for towing vessels. The authority is mandatory for towing vessels towing tank barges, but it is discretionary for all other towing vessels. However, even the mandatory statutory authority for towing vessels towing tank barges, now codified at 46 U.S.C. § 4102(f), does not mandate the use of fixed fire suppression systems on any towing vessel. Rather, the law directs the Coast Guard to require the use of “a fire suppression system or other measures to provide adequate assurance that fires on board towing vessels can be suppressed under reasonably foreseeable circumstances.” Thus, for towing vessels towing non-self-propelled tank barges, the law directs the Coast Guard to require either a fire suppression system or other measures; it does not mandate the installation of a fixed fire suppression system. The statutory language was crafted carefully to allow the Coast Guard to consider various alternatives to a fixed fire suppression system, taking into account “the characteristics, methods of operation, and nature of service of towing vessels.”

By adopting a solitary requirement for fixed fire suppression systems, regardless of length of the vessel, cargoes towed, and operational differences, the Coast Guard has abdicated its responsibility to take operational or service characteristics of towing vessels into account. The Coast Guard’s approach also ignore the towing industry’s excellent safety record, which does not merit the imposition of the exorbitant costs that a mandatory fixed fire suppression requirement would entail.

In addition, TSAC does not believe a need for the fixed system approach adopted in the SNPRM has been demonstrated. We believe that the Regulatory Assessment conducted by the Coast Guard is faulty, contains erroneous assumptions that are not supported by the relevant data, and severely underestimates the totality of costs that will be incurred when retrofitting fixed fire suppression systems on existing towing vessels. Moreover, the Coast Guard has failed to

consider all of the technical and design issues that may arise in connection with installation of a fixed fire suppression system on a towing vessel whose engine cannot be made airtight.

It is important to note, and TSAC agrees, that a fixed fire suppression system should be a measure of last resort when all other control measures have been unsuccessful in extinguishing a fire. Having said that, TSAC agrees that requiring the installation of a fixed fire suppression system on a new towing vessel is appropriate. The costs of design and installation can be integrated into other costs of construction and thereby achieve some level of cost efficiency. With existing vessels, however, TSAC does not believe that a fixed suppression system always will be a cost-effective measure. Moreover, from a safety standpoint, TSAC does not believe that the casualty data upon which the Coast Guard has relied demonstrates the need for a fixed suppression system or that it will provide any measurable improvement of safety, or reduction in the risk of personal injury, property damage, or death to crew members or other personnel.

### **1. Cost/Benefit Data Do Not Support the SNPRM Approach**

The Regulatory Assessment for this SNPRM states that the requirement to install a fixed fire suppression system ("FFES") would serve to reduce the number of uncontrolled engine room fires. The Regulatory Assessment also states that, when fully implemented, the SNPRM should significantly reduce the likelihood of deaths, injuries and environmental and property damage resulting from towing vessel casualties.

In terms of casualty data, TSAC believes that the Regulatory Assessment fails to indicate a need for the singular fixed fire suppression system approach proposed by the Coast Guard in the SNPRM.

In terms of cost-benefit data, TSAC believes that the Regulatory Assessment fails to substantiate that benefits to be gained outweigh the substantial costs of the proposal. The Regulatory Assessment states that, for the fixed fire suppression systems, the present value of the cost over the 13-year period of analysis would be \$109,809,202 and that the present value benefit would be \$23,467,869 -- for a net cost to industry of \$86,341,333. Out of the entire net present value of the fire suppression system requirement, only \$422,221 is attributable to avoided personal injuries, and this amount is overstated due to an inaccurate statement of the number of injuries that actually occurred as a result of engine room fires during the analysis period.<sup>1</sup> Moreover, the Regulatory Assessment fails to state how much of the damages incurred as a result of the 105 casualty cases reviewed was due to pollution damage for which the benefits from use of a fixed fire suppression system would not accrue to towing vessels not towing oil barges. The benefits to be gained from pollution avoided cannot be applied to towing vessels towing grain or other non-oil cargoes. To do otherwise results in a faulty cost-benefit analysis.

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<sup>1</sup> As we note below, the Regulatory Assessment states that there were 12 injuries resulting from 6 casualty cases; however, a review of the 105 casualty cases indicates that only 7 injuries resulted from these 6 cases. Because the Coast Guard calculated the value of injuries avoided based on the number of injuries which occurred (and whether they were minor or serious), the Coast Guard has overstated the present value of all injuries avoided.

**2. The Regulatory Assessment Substantially Underestimates Costs for Existing Vessels**

TSAC does not take issue with the estimates as applied to new towing vessels. However, TSAC believes the Regulatory Assessment prepared for the SNPRM severely underestimates the cost to install a fixed fire suppression system on an existing towing vessel. Some TSAC members have obtained estimates to install a fixed fire suppression system on some of their existing vessels and found that the cost, particularly for the larger towing vessels, approximates on average an amount closer to the highest amount predicted for these towing vessels rather than the average cited in the Regulatory Assessment.

The Regulatory Assessment estimates that the cost to install a fixed fire suppression system on towing vessels is approximately \$25,000 for a towing vessel under 24 meters in length and \$55,000 for a towing vessel over 24 meters in length. The Regulatory Assessment assumes no difference in cost between installation of such a system on a new towing vessel versus installation by retrofitting on an existing towing vessel. TSAC believes that an assumption that costs are comparable between installation on new and existing towing vessels is naïve and uninformed.

Several TSAC and Working Group members submitted estimated costs to retrofit existing vessels with a fixed fire suppression system. The estimates we have received indicate that the Coast Guard's cost estimates may be significantly understated. Moreover, the Coast Guard's cost data fail to take into account some cost components, such as design of structural alterations, electrical work, new storage lockers, need for emergency generators, and the like, that may increase the overall cost of retrofitting by a significant amount. We anticipate that these members will submit comments directly to the docket setting forth in detail the estimates they have received, but a summary of these estimates is included in Attachment III to these comments. This summary shows:

- The average cost of installation of the fixed fire suppression system for most towing vessels is approximately \$68,314.
- The costs of design and structural alterations can be as much as \$40,000 for a large towing vessel or a towing vessel originally built with many holes and spaces in the engine room or an engine room not large enough to accommodate the additional bottles needed for a fixed system.

**3. Costs For Revenue Lost Are Based on a False and Inappropriate Assumption**

The Regulatory Assessment assumes that operators with more than one towing vessel will face less costs in out-of-service time (i.e., lost revenue) on a sliding scale than operators with only one towing vessel. For instance, the Regulatory Assessment states that an owner with more than one towing vessel may be able to put another vessel into service. There is no support stated for this assumption other than the presumptive reasoning itself supplied by the Coast

Guard.<sup>2</sup> Most operators do not have extra towing vessels tied up and on standby just waiting to be put in service whenever another vessel is taken out of service. The Regulatory Assessment further states that the revenue lost by one vessel could become the revenue gained by another vessel and the owner might not lose revenue. Again, this is a false and deceptive assumption. The cost to an operator from lost revenue is still a cost – whether the operator is able to make it up in some other operation or not.

The Regulatory Assessment also misstates the number of existing towing vessels each year that would require the installation of a fixed fire suppression system. Out of the total number of existing documented towing vessels (6641), the Regulatory Assessment calculates the number (4467) that would not be exempt from the FFES requirement as an assist tug or a tug involved in pollution response. The Regulatory Assessment then assumes, without any stated foundation, that 23% of these vessels already have a fixed fire suppression system installed. The remainder (3440) would be required to install a fixed system within the 5-year grace period. Of the remainder, the Regulatory Assessment calculates that 68% (or 2339) are under 24 meters in length and 32% (or 1101) are 24 meters or more in length. The Regulatory Assessment then calculates the number of vessels per year (688) that would be installing a fixed fire suppression systems.<sup>3</sup> After discounting this number for new vessels put into service that are replacements for towing vessels taken out of service, the number of towing vessels taken out of service for installation would be 670.

The Coast Guard assumed that the daily revenue lost by a small towing vessel would be \$4000 and the daily revenue lost by each large towing vessel would be \$9000. The Regulatory Assessment further estimates that out-of-service time would be four days for a small towing vessel and 6 days for a large towing vessel.<sup>4</sup> This amounts to lost revenue for a small towing vessel of \$16,000 and lost revenue for a large towing vessel of \$36,000.

Since the Regulatory Assessment does not provide any empirical evidence to support the assumption made by the Coast Guard that the ability to avoid lost revenue is dependent upon the number of towing vessels owned, TSAC recommends that the full amount calculated on a vessel-be-vessel basis for lost revenue should be set forth. On this basis, using the Coast Guard's own numbers, the annual cost in lost revenue would be as follows:

| #<br>vessels | percent<br>large or<br>small | # vessels<br>large or<br>small | daily revenue<br>lost | total<br>revenue lost<br>annually |
|--------------|------------------------------|--------------------------------|-----------------------|-----------------------------------|
| total        |                              |                                |                       |                                   |

<sup>2</sup> We are also not convinced that this assumption meets the requirements of OMB Circular No. A-94 ("Guidance and Discount Rates for Benefit-Cost Analysis of Federal Programs") (1992), or the guidance set forth in "Regulatory Impact Analysis Guidance," REGULATORY PROGRAM OF THE UNITED STATES GOVERNMENT.

<sup>3</sup> The Regulatory Assessment then discounts this annual number by another 18 vessels to 670, claiming that 18 of the 688 vessels each year would be new vessels for which there would not be any lost revenue.

<sup>4</sup> One of TSAC's members estimates that out-of-service time for its towing vessels, particularly those requiring substantial structural modifications, would be an additional 14 ½ days beyond normal drydocking time. Normal drydock time for this operator is 10 days.

|       |   |     |   |     |   |          |   |              |
|-------|---|-----|---|-----|---|----------|---|--------------|
| 670   | x | 68% | = | 456 | x | \$36,000 | = | \$16,416,000 |
| 670   | x | 68% | = | 215 | x | \$16,000 | = | \$3,440,000  |
| TOTAL |   |     |   |     |   |          | = | \$19,856,000 |

The above total annual lost revenue compares with annual lost revenue of \$1,305,696 set forth in the Regulatory Assessment. Therefore, if the Coast Guard's assumption is erroneous that lost revenue is dependent upon the number of vessels owned, and we believe it is, then the Coast Guard's cost analysis for lost revenue is understated by a factor of more than 15.

#### **4. Casualty Data Do Not Support the Requirement for Fixed Systems**

The SNPRM states that the purpose of changing the approach from manual fire fighting equipment to fixed fire suppression systems is safety of the crews of towing vessels. However, in a vast majority of the casualty cases analyzed by the Coast Guard in the Regulatory Assessment, engine room fires were extinguished without death or any personal injury, and without the use of fixed fire suppression systems. Thus, there does not appear to be a need for the approach adopted by the Coast Guard in the SNPRM.

In its Regulatory Assessment, the Coast Guard makes the following assumptions regarding personal injury and environmental damage:

1. The Regulatory Assessment assumes that 42% of losses would be reduced by installation of a fixed fire suppression system.
2. During the 1992 to 1996 analysis period, the Regulatory Assessment identifies 19,791 barrels of oil spilled as a result of 5 engine room fires. However, the vast majority of the oil spilled, i.e., 19,714 barrels, resulted from the SCANDIA/NORTH CAPE incident. Eliminating this one anomalous incident from the analysis indicates that only 77 barrels were spilled as a result of engine room fires.

TSAC has analyzed the 105 engine room fire casualty cases referenced in the Regulatory Assessment. These cases occurred during 1992 to 1996.<sup>5</sup> TSAC concludes that such data do not support the need for mandatory installation of fixed fire suppression systems on towing vessels. Our analysis is set forth in Attachments I and II to these comments. Attachment I is a summary of the analysis of the 105 casualty cases referenced in the Regulatory Assessment and Attachment II is a case by case listing of each casualty, based on both the individual casualty reports themselves and the Coast Guard's Regulatory Assessment, indicating whether the fire was extinguished, the number of injuries which occurred, the amount of damages sustained, etc. Our analysis shows the following:

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<sup>5</sup> TSAC notes that all of these casualties occurred before the requirement for firefighting training was adopted in 1996.

- Approximately 80% of the engine room fires cited in the Regulatory Assessment (83 out of 105 cases) were extinguished using manual or portable equipment or the services of a local fire department – without use of a fixed fire suppression system.
- Only 7 injuries resulted from 6 of the casualty cases.<sup>6</sup>
- No deaths resulted from any of the casualty cases.
- Approximately 60% of the cases (63 out of 105 cases) resulted in damages of less than \$10,000 (compared with an average fixed system cost per vessel of either \$25,000 or \$55,000 using Coast Guard estimated costs).
- Less than 5% of the cases (5 out of 105 cases) resulted in any pollution.
- Excluding barrels spilled from the NORTH CAPE, only 78.21 barrels of oil were spilled as a result of 4 cases, and in each of those 4 cases, the largest amount spilled was 36 barrels.
- If the 15% reduction in losses due to voyage planning is taken into account with the 42% reduction in losses due to fixed fire suppression systems, the overall effective rate of reduction drops to 35.7%  $[(100\% - 15\%) \times 42\% = 35.7\%]$ .

Even the Coast Guard's own analysis of the potential benefits of fixed fire suppression systems indicates that such systems would have reduced losses by 10% or less in 54% of the cases (and this percentage includes the NORTH CAPE incident).

## 5. A Fixed System Would Not Have Prevented the North Cape Oil Spill

The preamble to the SNPRM explains, in the “Background and Purpose” section, the fire suppression rules result from legislation adopted in 1996 after “the tugboat SCANDIA, towing the oil barge NORTH CAPE, caught fire five miles off the coast of Rhode Island. The crew could not control the fire, and without power they were unable to prevent the barge carrying 4 million gallons of oil from grounding and spilling about a quarter of its contents into the coastal waters.” The second sentence in this explanation is critical, yet appears to be an oversight by the Coast Guard in its focus on the use of fixed fire suppression systems in this SNPRM. Paraphrasing the preamble, it states that the crew could not control the fire **and without power** they were unable to prevent the grounding and subsequent oil spill. The Coast Guard in this SNPRM has proposed an approach which the agency asserts would enable the crew to control any engine room fire that may break out, but the approach chosen would also cause the towing

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<sup>6</sup> The Regulatory Assessment claims that 12 injuries – 7 minor and 5 serious – occurred in the 105 cases. However, Appendix B of the Regulatory Assessment only lists 7 injuries total. If the 35.7% reduction in injuries is applied to this number, the result is a reduction of less than 3 injuries total – at a cost of almost \$110 million using the Coast Guard's own numbers.

vessel to lose all power. Thus, if the SCANDIA had installed a fixed fire suppression system before the incident in 1996, the crew may have been able to bring the fire in the engine room under control, but the oil spill still likely would still have resulted. That is because the tugboat would have lost power when the fixed fire suppression system was triggered and, given the gale storm conditions at the time of the incident, the crew would have been unable to keep the NORTH CAPE from grounding.

Thus, the very factor that ensured the occurrence of the NORTH CAPE spill – the loss of the SCANDIA’s power – now is effectively being mandated by the Coast Guard through the approach adopted in the SNPRM: mandatory installation of fixed fire suppression systems on all towing vessels. TSAC believes the loss of power when a fixed fire suppression system is triggered must be given further consideration before it is mandated for all towing vessels.

Moreover, given the length of time between discovery and the time the fixed fire suppression agent would have been released, major components of the engine room still would have been disabled. While the SCANDIA crew may have been able to remain on board the tug, the NORTH CAPE’s inability to anchor would have remained a major factor in causing the pollution incident.

**C. Structural Difficulties and Design Problems Have Not Been Adequately Considered**

TSAC believes that design and structural alteration costs and problems have not been adequately considered by the Coast Guard in adopting a fixed fire suppression system requirement rather than a manual firefighting system. For instance, TSAC has found no discussion in the preamble of any of the following problems that have been identified by our members and working group participants:

- Where would an operator locate all of the CO<sub>2</sub> bottles that would be required for installation of a CO<sub>2</sub> system (one operator estimated he would need to locate 19 bottles of CO<sub>2</sub> for a fixed system he was planning to install) if the engine room is too small to accommodate them;
- Are new stability concerns created by the structural alterations that may be needed for installation of a new fixed fire suppression system?
- Does the installation of a fixed system require the installation of automatic dampers to close off fans and blowers (automatic louvers are very expensive) or will manual fans and blowers be acceptable?
- Does the proposal assume the use of automatic door closers and, if so, are these supposed to be fire doors?
- If fire doors are expected to be used, who is supposed to close them?

- Are there any limits on how long the piping for the fire suppression agent can be?
- What are the estimated costs to install fire doors?
- What are the estimated costs for ABS plan approval for ABS-classed vessels, for engineering and drawing costs, for bulkhead penetrations, for wiring diagrams, and for other piping diagrams and plans?

#### **D. Additional Concerns**

TSAC members have identified the following additional concerns that must be addressed by the Coast Guard before any final rule on fire suppression systems is published:

- Will existing fixed fire suppression systems on existing vessels be grandfathered?
- Will the Coast Guard allow the use of fixed fire suppression agents that have been approved by IMO under SOLAS IV but not by the Coast Guard?
- What risk assessment has been conducted by the requirement to include a fixed fire suppression system that (such as with CO<sub>2</sub>) has the potential to significantly harm human beings?
- Since the generators for many towing vessels are located in the engine room, and would be adversely affected by triggering of a fixed fire suppression system, what is the cost in terms of additional risk of injury, death and property or environmental damage that may occur when all power to the towing vessel is shut-off during an engine room fire with a fixed fire suppression system?
- 

#### **E. Coast Guard's Original Approach in the NPRM is Recommended**

In 1997, TSAC submitted Recommendation No. 106 to the Coast Guard. This recommendation proposed that the Coast Guard adopt fire suppression measures such as fire detection systems, semi-portable fire extinguishers, training of crewmembers, and fixed or portable fire pumps for the protection of existing towing vessels and for new towing vessels under 24 meters in length, regardless of cargoes transported. For new towing vessels 24 meters and over in length, TSAC recommended that these vessels be required to have a fixed fire pump, a remote main engine shutdown and fuel shutoff, and a fixed fire suppression system. The Coast Guard adopted this basic approach, with minor adjustments, in the NPRM published in October 1997. TSAC put a lot of work into this recommendation, giving serious and due consideration to personnel and safety issues and pollution prevention. We hate to think that our previous work was for naught. Moreover, these comments indicate that we have serious and strong concerns about the approach the Coast Guard has adopted in the SNPRM.

Except for the size threshold for new towing vessels, and except for equipment requirements already adopted in the final rule on Fire Protection Systems, TSAC recommends that the Coast Guard revert to the approach first proposed in the NPRM whereby existing towing vessels could comply with fire suppression system requirements through either a fixed system or a manual system. Existing vessels should continue to have the option of employing manual firefighting measures unless and until the Coast Guard can demonstrate through its cost/benefit and casualty analyses that there are significant safety benefits and damage prevention gains to be made.

The statute requires the Coast Guard to consult with TSAC in undertaking its rulemaking. At no time prior to issuance of the SNPRM did the Coast Guard explain to TSAC why it was changing its course and adopting a singular requirement of a fixed fire suppression system rather than the option of manual fire suppression measures. The SNPRM similarly fails to a rational explanation. TSAC encourages the Coast Guard to continue working with us before this rulemaking is finalized so that the consultation mandates of the Act can be met and a satisfactory and justifiable rulemaking can result.

### **III. Final Recommendations**

1. With respect to voyage planning, TSAC supports the provisions of the SNPRM with the changes we have set forth in section I above.
2. With respect to fire suppression, TSAC supports the application of the provisions in the SNPRM for all new towing vessels only.
3. Because the justification has not been demonstrated for adopting a requirement for installation of a fixed fire suppression system on all existing towing vessels, TSAC believes the Coast Guard should reconsider this approach and instead provide the option to allow owners to install either a fixed fire suppression system or the list of equipment that was proposed initially in the fire suppression NPRM published in October 1997. While TSAC originally proposed in Recommendation No. 106 that these equipment requirements be applied only to towing vessels of 24 meters or longer in length, TSAC appreciates that the 1996 Coast Guard Authorization Act did not provide any exemptions based on length of the vessel; accordingly, we have no objection to the imposition of the requirements (not previously adopted) to all non-exempt existing towing vessels regardless of length.
4. The next rulemaking issuance for this docket should be either another supplemental notice of proposed rulemaking or an interim final rule with a request for further comments.

\* \* \* \* \*

TSAC appreciates the opportunity to provide these comments in furtherance of our charter as a safety advisory committee to the Coast Guard and the Department of Transportation for towing vessel safety.

Respectfully,

TOWING SAFETY ADVISORY COMMITTEE

Jeffrey E. Parker  
Chairman

## TSAC ANALYSIS OF USCG Casualty Data--Engine Room Fires: 105 Cases

### FIRES EXTINGUISHED / NOT EXTINGUISHED

|                      | # Extinguished | # Not Extinguished | # Not Specified* | Total #    | Percent     |
|----------------------|----------------|--------------------|------------------|------------|-------------|
| Inland               | 51             | 6                  | 22               | 79         | 75%         |
| Ocean/Coastal        | 13             | 5                  | 8                | 26         | 25%         |
| <b>GRAND TOTALS:</b> | <b>64</b>      | <b>11</b>          | <b>30</b>        | <b>105</b> | <b>100%</b> |

Percentage: **61%** **10%** **29%** **100%**

\*Not Specified=the casualty reports provided in the docket did not state whether the fire was extinguished.

65% of all inland cases extinguished  
28% of inland cases not specified as extinguished or not  
8% of all inland cases not extinguished--only 6 cases

The fires that were extinguished were put out by crewmembers using portable fire extinguishers, fire pumps and hoses and/or with the help of local fire departments—without a requirement for fixed fire suppression system. (Among the 51 Inland cases, there was only one reported injury.)

19 of the 30 "Not Specified" casualties incurred damages equal to or less than \$8,500 and can reasonably be assumed to have been extinguished. (The next lowest damage amount is \$35,000.)

Adding the 19 "Not Specified" but assumed extinguished fires to the 64 extinguished fires, equals a total of 83 extinguished fires out of the 105 cases.

**79% of the engine room fires were extinguished. (83/105)**

### INJURIES

**No deaths resulted from any of the 105 cases.**

**There were only 7 injuries which occurred during 6 of the 105 engine room fires.**

Note: Page 21 of the Regulatory Assessment says:

"Seven of the injuries were minor and 5 were serious. See Appendix B."

There is a footnote after this statement that reads: "The 12 injuries were from 6 casualty cases."

However, our review of Appendix B, as mentioned above, indicates that there were only 7 injuries among 6 casualty cases.

## TSAC Analysis (cont.)

### DAMAGES

37 of the 105 cases (35%) resulted in damages valued at less than or equal to \$1,000.

12 of the 105 cases (11.4%) resulted in damages valued between \$1,001 - \$3,000.

8 of the 105 cases (7.6%) resulted in damages valued between \$3,001 - \$5,000.

6 of the 105 cases (5.7%) resulted in damages valued between \$5,001 - \$10,000.

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**63 of the 105 cases (60%) resulted in damages of less than \$10,000.**

### POLLUTION

Of the 105 casualties, only 5 resulted in pollution with a total of 19,792 barrels spilled.

**Excluding the Scandia casualty, only 78.21 bbls were spilled.**

None of the remaining 4 pollution incidents resulted in spills greater than 36 bbls.

(The Scandia/North Cape casualty spilled 19,714 bbls.)

### EFFECTIVENESS OF FIRE-SUPPRESSION

Even the Coast Guard's own analysis of the potential benefits of fixed fire suppression system shows that such systems would have reduced losses by only 10 percent or less (including not at all) in 57 of the 103 engine room fires aboard towing vessels (54 percent). (There is no analysis for 2 of the 105 cases.)

Of particular interest is the Coast Guard's assessment of the benefits a fixed fire suppression system would have provided aboard the Scandia: The Coast Guard's analysis indicates that a fixed fire suppression system would have reduced the losses by only 10 percent in this case.

(See Appendix B and Page 15 of the Regulatory Assessment.)

### SOURCES

**Regulatory Assessment and Initial Regulatory Flexibility Analysis, SNPRM Towing Vessel Safety: Fire Suppression Systems and Voyage Planning for Towing Vessels (USCG-2000-6931-8)**

**Casualty Reports Supporting Appendix B of the Regulatory Assessment and Initial Regulatory Flexibility Analysis**

**(USCG-2000-6931-17, USCG-2000-6931-18, USCG-2000-6931-19)**

# Towing Safety Advisory Committee

**Jeffrey E. Parker**

***Chairman***

Allied Transportation Company

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April 30, 2001

Docket Management Facility  
U.S. Department of Transportation (DOT)  
Room PL-401  
400 Seventh Street, S.W.  
Washington, D.C. 20590-0001

Re: **USCG-2000-6931**  
**Supplemental Notice of Proposed Rulemaking**  
**Fire-Suppression Systems and Voyage Planning for Towing Vessels**

Dear Sir or Madam:

The Towing Safety Advisory Committee ("TSAC") submits the following comments on the Supplemental Notice of Proposed Rulemaking, **"Fire-Suppression Systems and Voyage Planning for Towing Vessels,"** 65 Federal Register 66,941 (Nov. 8, 2000) ("SNPRM"). TSAC's Working Group on Fire Suppression and Voyage Planning, which in various forms has been involved with all of the rulemaking initiatives arising from the *Scandia/North Cape* oil spill in 1996, developed these comments. These comments were approved at a meeting of the full TSAC on April 30, 2001, by a vote of 9 to 1, with 10 of the 16 members of TSAC participating.

We have divided these comments into two sections: The first addresses the portion of the SNPRM dealing with Voyage Planning and the second addresses the portion of the SNPRM dealing with Fire Suppression.

## **I. VOYAGE PLANNING**

TSAC notes that, with certain exceptions, the SNPRM incorporates many of the suggestions made by TSAC in previous reports or input provided to the project managers. We also note that the SNPRM does not allow towing companies as much flexibility in determining how to implement the voyage planning requirement, in that the rulemaking appears to make consideration of all listed categories of information in proposed Section 164.80(c) mandatory.

TSAC believes that a voyage plan should consider all of the categories of information even if a company recognizes that for any particular voyage or trip some of the required considerations might not apply. We discuss this issue further below.

TSAC's comments on voyage planning address eight sub-topics: (1) applicability of the voyage planning requirements to inland operators; (2) whether it should be mandatory to consider all of the categories of information included in proposed Section 164.80(c)(1) through (9); (3) whether the voyage plan must be a written document; (4) the definition of a "voyage," particularly as applied to inland towing vessels; (5) the duty to consider "environmentally sensitive areas" in formulating a voyage plan; (6) the definition of "substantial deviation"; (7) elimination of the 12-hour threshold for application of the voyage planning requirement; and (8) interface between the proposed voyage planning rule and the First Coast Guard District Regulated Navigation Area ("RNA") requirements for voyage planning.

## **A. Applicability**

The applicability of the voyage planning requirement to inland towing vessel operators has engendered considerable controversy among TSAC members. In proposed Section 164.80, the SNPRM requires the owners, operators and masters of all towing vessels employed to tow a barge to undertake voyage planning at the start of any voyage of 12 hours or more:

(c) The owner or operator, and the master, of each towing vessel employed to tow a barge or barges must ensure the development of a voyage plan for each intended trip or voyage with the barge or barges, on the navigable waters of the United States, as defined in 33 U.S.C. 1222(5). The voyage plan must take into account all pertinent information, and be complete before the vessel embarks on a trip or voyage of more than 12 hours. The master must check the planned route for proximity to hazards and known environmentally sensitive areas (noted on charts or maps) before the trip or voyage starts. During a trip or voyage, if anyone in authority decides to deviate substantially from that route, then the master or mate must ensure the development of a plan for the new route before the vessel does deviate from the plan for the current route.

Some TSAC members have expressed the concern that the requirements of proposed Section 164.80(c) already are mandated by one regulation or another and questioned why we need a new requirement at all. At the same time, representatives of inland operators acknowledged that their companies already take most or all of the categories of information in proposed Section 164.80(c) into account.

The consensus of TSAC is that, with some further elaboration and detail provided in a Navigation and Vessel Inspection Circular ("NVIC") as to how the Coast Guard will apply the voyage planning requirement on a geographic or regional basis, TSAC should support the applicability of the voyage planning requirement to inland operators. TSAC arrived at this consensus by a vote of 9 to 6 at its March 15, 2001 meeting, albeit with continuing opposition by a substantial minority of members. There is no dispute that the Coast Guard should apply the voyage planning requirement to coastal operators.

TSAC considered at its April 30 meeting a motion to exclude from the voyage planning requirement towing vessels operating exclusively on Western Rivers; however, this motion failed for lack of a simple majority on a 5 to 5 vote. The tie vote indicates the continuing split among TSAC members as to the appropriateness of applying the voyage planning requirement to inland river operations.

With due respect to the minority position taken by some of our members, TSAC recommends that, to clarify the applicability of the voyage planning requirement, the explanation currently provided on page 66942 of the preamble to the SNPRM as to which towing vessels are exempted from the voyage planning requirement should be incorporated into the regulatory text of proposed Section 164.80(c) so that operators may avoid any conflicts in interpretation by field inspectors and boarding officers. In addition, TSAC voted unanimously at the April 30 meeting to recommend that the proposed rule be amended to exempt towing vessels engaged in harbor assist operations, with “harbor assist” defined as proposed in the draft NVIC on towing vessel licensing and manning.<sup>7</sup> Our recommendation is as follows [**new text is in italics**]:

(c) The owner or operator, and the master, of each towing vessel employed to tow a barge or barges, *except a towing vessel engaged in assistance towing, harbor assist, pollution response, or fleeting duties in limited geographical areas*, must ensure the development of a voyage plan for each intended trip or voyage with the barge or barges, on the navigable waters of the United States, as defined in 33 U.S.C. 1222(5). The voyage plan must take into account all pertinent information, and be complete before the vessel embarks on a trip or voyage . . .

## **B. Section 164.80(c)(1) – (9) Categories of Information**

The SNPRM provides that each voyage plan “must consider” (emphasis added) the following:

- (1) Applicable information from up-to-date nautical charts and publications including Coast Pilot, Coast Guard Light List, and Coast Guard Local Notice to Mariners for each port of departure and for each port of call (destination);
- (2) Current and forecasted weather, including visibility, wind, and sea state from each port of departure to each port of call;
- (3) Data on tides and tidal currents for each port of departure and destination, as well as for ports of call, and on river stages, with forecasts, if applicable;
- (4) Forward and after drafts of the areas;
- (5) Appropriate pre-departure checks;

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<sup>7</sup> The draft NVIC on “Licensing and Manning for Officers of Towing Vessels,” distributed at TSAC’s March 14-15, 2001 meeting, defines “harbor assist” to mean “the use of a towing vessel during maneuvers to dock, undock, moor, or unmoor a vessel or to escort a vessel with limited maneuverability.”

- (6) Calculated speeds and estimated times of arrival at proposed waypoints;
- (7) Communication contacts at Vessel Traffic Services (if applicable), bridges, and facilities, and port-specific requirements for VHF radio;
- (8) Any standing orders (for instance, closest points of approach, special conditions, and critical maneuvers); and
- (9) Whether the vessel has sufficient power to control the tow under all foreseeable circumstances.

TSAC believes that the words “must consider” imply a mandatory obligation to consider and document all categories of information listed above, whether such information is relevant or not to the planned voyage or trip. While there was much discussion within TSAC about whether “must consider” means mandatory, we believe that the intent of the regulation and the position of TSAC in not having a “one size fits all” regulation is better served by changing “must consider” to “should consider, as appropriate.” TSAC also recommends retention of the mandatory nature of the language requiring the owner, operator and master to prepare a voyage plan (i.e., master “must ensure the development of a voyage plan”).

### **C. Whether the Voyage Plan Must Be a Written Document**

TSAC notes that the SNPRM does not require the preparation of a written or formal voyage plan. In this instance, the SNPRM allows each company the flexibility to determine whether some kind of written voyage plan or other documentation (such as a voyage planning checklist) is needed to ensure its ability to prove compliance with the regulatory requirement. Some members of TSAC have expressed the position that a written document is essential and is the only way to prove that the master has prepared a voyage plan, but the majority of TSAC members are comfortable with preparation of a voyage plan that is not written. We recognize that it may be difficult after an incident already has occurred to prove the existence of a voyage plan if not in writing, but that companies should decide for themselves how to best comply with the voyage planning requirement. This is in keeping with previous recommendations of TSAC that the Coast Guard should not require formal written policies or documents. Therefore, TSAC recommends that the Coast Guard explicitly acknowledge in the regulatory text that a separate written voyage plan is not required. Our recommendation is as follows [**new text is in italics**]:

#### **§ 164.80 Tests, inspections, and voyage planning.**

\* \* \*

- (c) \* \* \* The voyage plan, *which need not be a separately written document*, must take into account all pertinent information, and be complete before the vessel embarks on a trip or voyage . . .

In addition, it is not clear whether Section 164.78(b), as currently codified, would require the fact that a voyage plan has been prepared -- in whatever form -- to be logged in the vessel’s logbook or other record carried on board the vessel. Section 164.78(b) currently refers to

“inspections and tests required by § 164.80” that must be logged. Voyage planning obviously is not an inspection or test, but it is unclear whether the generic reference to “§ 164.80” in Section 164.78(b) would include voyage planning once a final rule requiring voyage planning is adopted. This must be clarified.

#### **D. Definition of “Voyage”**

There have been a significant number of questions about just what is a voyage, especially when undertaken on inland rivers where the means to differentiate between the end of one voyage and the start of another is not always obvious. TSAC recommends that a definition of “voyage” be developed with respect to geographic areas or types of towing operators or operations and discussed in the NVIC that the Coast Guard anticipates developing next, once the rulemaking is in place.

#### **E. Consideration of “Environmentally Sensitive Areas”**

The SNPRM provides that the master must check the planned route for proximity to hazards and “known environmentally sensitive areas” (noted on charts or maps) before the trip or voyage starts. TSAC is concerned that the reference to “(noted on maps and charts)” may be too vague. For instance, Area Contingency Plans developed under the Oil Pollution Act of 1990 may contain maps of environmentally sensitive areas; however, not all towing vessel operators are involved in the transportation of oil and petroleum products and therefore would have no cause to consult these maps or, in fact, have any knowledge of their existence. TSAC recommends that only those typical nautical charts and maps that a mariner generally consults to determine the existence and location of known hazards to navigation, and which are required to be on board the vessel, must be considered by the master. By making this recommendation, TSAC does not wish to imply that the master should omit consideration of environmentally sensitive areas if known to that master. But this information should not be included in the “one size fits all” laundry list of information that must be considered in voyage planning unless those areas are designated on the specific maps and charts the master is required to consider.

Further, since proposed Section 164.80(c)(1) already incorporates a requirement for the master to consider applicable information from nautical charts and publications, TSAC recommends that a reference to “paragraph (1) below” be added after the parenthetical “(maps and charts)” and that the language “and known environmentally sensitive areas” be deleted. This will ensure that masters are not penalized for failing to consider maps and/or charts that they did not know even existed and otherwise would have no reason to know. TSAC also recommends that a cross-reference to those existing provisions in the current regulations which require current charts and maps (i.e., Sections 164.33 and 164.72, as applicable) be included in the regulatory text.

Our recommendation is as follows [**new text is in italics; deleted text is struck through**]:

\* \* \*

(c) \* \* \* The master must check the planned route for proximity to hazards ~~and known environmentally sensitive areas~~ (noted on charts or maps *required to be consulted by paragraph (1) below*) before the trip or voyage starts. During a trip or voyage, if anyone in authority decides to deviate substantially from that route, then the master or mate must ensure the development of a plan for the new route before the vessel does deviate from the plan for the current route. Each plan must consider—

(1) Applicable information from up-to-date nautical charts and publications including Coast Pilot, Coast Guard Light List, and Coast Guard Local Notice to Mariners for each port of departure and for each port of call (destination), *as required by either § 164.33 or § 164.72, as applicable; . . .*

## **F. Definition of “Substantial Deviation”**

TSAC members have discussed whether additional explanation of what is considered to be a “substantial deviation” is needed, but we recommend retaining the regulatory language as is currently proposed concerning deviations and the need to prepare a new voyage plan for the deviated route. If additional explanation is needed, TSAC recommends that it be included in the voyage planning NVIC.

## **G. 12-Hour or More Voyages**

TSAC questions the justification for applying voyage planning only to vessels on voyages of more than 12 hours. Some voyages even shorter in length may be considered more hazardous and risky than voyages lasting 12 hours or more. TSAC recommends that the reference to voyages over 12 hours be deleted, as follows **[deleted text is struck through]**:

**§ 164.80 Tests, inspections, and voyage planning.**

\* \* \*

(c) \* \* \* The voyage plan must take into account all pertinent information, and be complete before the vessel embarks on a trip or voyage ~~of more than 12 hours~~.

## **H. Clarification of Interface with First District Rule**

In December 1998, the Coast Guard published a Final Rule establishing a Regulated Navigation Area (“RNA”) for all navigable waters within the First Coast Guard District (63 Federal Register 71,764; Dec. 30, 1998). The Final Rule imposes a duty on operators of towing vessels towing tank barges within the waters of the First Coast Guard District to engage in voyage planning. This requirement now is codified at 33 C.F.R. § 165.100(d)(3). The SNPRM does not specify whether the voyage planning requirement proposed for § 164.80(c) is intended to supersede or complement the voyage planning requirement in place in First District waters. The interaction between the SNPRM and the RNA vis-à-vis voyage planning must be clarified.

TSAC recommends that the Coast Guard clarify that the SNPRM would supersede the voyage planning requirement in the RNA.

## **II. FIRE SUPPRESSION**

The SNPRM substantially changes the direction and approach of the Notice of Proposed Rulemaking, which was published in 1997 (62 Federal Register 52,057; Oct. 6, 1997) (“NPRM”). The NPRM proposed fire suppression measures for all towing vessels, but did not require the mandatory installation of a fixed fire suppression system. Instead, the NPRM proposed allowing the installation of manual alternatives comprised of fire detection systems, semi-portable fire extinguishers, training of crewmembers, and fixed or portable fire pumps. The SNPRM now rejects completely the manual system approach and mandates that all new and existing towing vessels (not just those new vessels of 24 meters or more in length) have a fixed fire suppression system installed. There is no distinction between new and existing vessels; in size of towing vessels; or in types of barges or cargoes towed.

TSAC supports requirements that have the real potential to help save lives and prevent personal or property damage. However, any new requirements must be cost-effective and must address a need for which current regulations arguably may be deficient. While we appreciate the statutory directive to consider the requirement for fire suppression systems, we believe the Coast Guard has the flexibility and discretion to adopt other measures that will accomplish just as much if not more than a fixed fire suppression system that comes with a very high price tag for each and every towing vessel operator in this country.

As discussed below, TSAC does not support a requirement that a fixed fire suppression system be retrofitted on all existing towing vessels – even with a five-year “grace period.” The Committee does not believe that a fixed fire suppression system will be effective on those towing vessels whose engine rooms cannot be made airtight. Air tightness is best addressed at the design stage before a vessel is built – not through an undemonstrated retrofitting requirement. Trying to make airtight those engine rooms on existing towing vessels that were designed to have holes and spaces will pose considerable structural design and feasibility difficulties for such towing vessels. In contrast to statements made in the preamble to the SNPRM, TSAC does not believe it is simply a matter of adding more bottles of CO<sub>2</sub> or halon to make up for the lack of airtightness.

The cost and casualty data presented in the Regulatory Assessment, which TSAC also has analyzed, simply do not support the propositions for which the Coast Guard has set forth such data. The casualty analysis does not support a need for mandatory fixed fire suppression systems and the cost data is so faulty that it fails to demonstrate the cost-effectiveness of mandating fixed fire suppression systems. These concerns are addressed further below.

TSAC believes the Coast Guard must step back and re-focus on what a fire suppression system is intended to accomplish. We believe the emphasis should be on dealing with fires in

their insipient stage and what equipment is needed to fight any engine room fires at that stage. Given the new equipment requirements now adopted in the Fire Protection Measures, Coast Guard should re-evaluate whether any residual need for a fixed fire suppression system exists, particularly in the face of a lack of compelling casualty data supporting mandatory installation of fixed fire suppression systems, and in the face of cost data suggesting that cost connected with the SNPRM's mandatory fixed systems will severely outweigh any benefits to be gained from this new requirement.

#### **A. Application**

Although TSAC questions the need and justification for the imposition of mandatory fixed fire suppression systems on existing towing vessels, TSAC does not oppose the requirement as applied to new towing vessels (which should be defined as towing vessels for which the contract for construction is entered into after the effective date of the regulations), except those to be operated exclusively on inland rivers and canals. TSAC approved a motion at its April 30 meeting by a vote of 8 to 2 to recommend exclusion of new towing vessels operating exclusively on rivers and canals from the requirement to have installed a fixed fire suppression system. With respect to existing towing vessels, our recommendation is that the Coast Guard should revert to the approach included in the NPRM, which allows use of manual fire suppression systems.

TSAC believes that the application of the fire suppression system requirements to new and existing towing vessels involved in ship and harbor assist (docking and undocking), fleeting duties, escort duties, and operation in limited geographical areas must to be clarified. In particular, TSAC recommends that the definition of "harbor assist" in the draft licensing NVIC be included in the regulatory text, and that a definition of "new towing vessel"; "limited geographical areas"; and "fleeting duties" likewise be included in the fire suppression regulatory text. Because a fire suppression system requirement may involve structural alterations and not just operational alterations (as would voyage planning), it is not sufficient to address these definitional concerns in a NVIC left for another day. The towing industry must be certain as to which vessels will require these systems and which will not.

#### **B. Justification and Need for Fixed Fire Suppression Systems**

TSAC believes it is important to re-focus on the applicable statutory authority that instigated this rulemaking. The *Coast Guard Authorization Act of 1996* was enacted in response to the SCANDIA/NORTH CAPE oil spill in January 1996. Section 902 of the Act directs the Secretary of Transportation, in consultation with TSAC, to prescribe rules on fire suppression systems or other measures for towing vessels. The authority is mandatory for towing vessels towing tank barges, but it is discretionary for all other towing vessels. However, even the mandatory statutory authority for towing vessels towing tank barges, now codified at 46 U.S.C. § 4102(f), does not mandate the use of fixed fire suppression systems on any towing vessel. Rather, the law directs the Coast Guard to require the use of "a fire suppression system or other measures to provide adequate assurance that fires on board towing vessels can be suppressed

under reasonably foreseeable circumstances.” Thus, for towing vessels towing non-self-propelled tank barges, the law directs the Coast Guard to require either a fire suppression system or other measures; it does not mandate the installation of a fixed fire suppression system. The statutory language was crafted carefully to allow the Coast Guard to consider various alternatives to a fixed fire suppression system, taking into account “the characteristics, methods of operation, and nature of service of towing vessels.”

By adopting a solitary requirement for fixed fire suppression systems, regardless of length of the vessel, cargoes towed, and operational differences, the Coast Guard has abdicated its responsibility to take operational or service characteristics of towing vessels into account. The Coast Guard’s approach also ignore the towing industry’s excellent safety record, which does not merit the imposition of the exorbitant costs that a mandatory fixed fire suppression requirement would entail.

In addition, TSAC does not believe a need for the fixed system approach adopted in the SNPRM has been demonstrated. We believe that the Regulatory Assessment conducted by the Coast Guard is faulty, contains erroneous assumptions that are not supported by the relevant data, and severely underestimates the totality of costs that will be incurred when retrofitting fixed fire suppression systems on existing towing vessels. Moreover, the Coast Guard has failed to consider all of the technical and design issues that may arise in connection with installation of a fixed fire suppression system on a towing vessel whose engine cannot be made airtight.

It is important to note, and TSAC agrees, that a fixed fire suppression system should be a measure of last resort when all other control measures have been unsuccessful in extinguishing a fire. Having said that, TSAC agrees that requiring the installation of a fixed fire suppression system on a new towing vessel is appropriate. The costs of design and installation can be integrated into other costs of construction and thereby achieve some level of cost efficiency. With existing vessels, however, TSAC does not believe that a fixed suppression system always will be a cost-effective measure. Moreover, from a safety standpoint, TSAC does not believe that the casualty data upon which the Coast Guard has relied demonstrates the need for a fixed suppression system or that it will provide any measurable improvement of safety, or reduction in the risk of personal injury, property damage, or death to crew members or other personnel.

### **1. Cost/Benefit Data Do Not Support the SNPRM Approach**

The Regulatory Assessment for this SNPRM states that the requirement to install a fixed fire suppression system (“FFES”) would serve to reduce the number of uncontrolled engine room fires. The Regulatory Assessment also states that, when fully implemented, the SNPRM should significantly reduce the likelihood of deaths, injuries and environmental and property damage resulting from towing vessel casualties.

In terms of casualty data, TSAC believes that the Regulatory Assessment fails to indicate a need for the singular fixed fire suppression system approach proposed by the Coast Guard in the SNPRM.

In terms of cost-benefit data, TSAC believes that the Regulatory Assessment fails to substantiate that benefits to be gained outweigh the substantial costs of the proposal. The Regulatory Assessment states that, for the fixed fire suppression systems, the present value of the cost over the 13-year period of analysis would be \$109,809,202 and that the present value benefit would be \$23,467,869 -- for a net cost to industry of \$86,341,333. Out of the entire net present value of the fire suppression system requirement, only \$422,221 is attributable to avoided personal injuries, and this amount is overstated due to an inaccurate statement of the number of injuries that actually occurred as a result of engine room fires during the analysis period.<sup>8</sup> Moreover, the Regulatory Assessment fails to state how much of the damages incurred as a result of the 105 casualty cases reviewed was due to pollution damage for which the benefits from use of a fixed fire suppression system would not accrue to towing vessels not towing oil barges. The benefits to be gained from pollution avoided cannot be applied to towing vessels towing grain or other non-oil cargoes. To do otherwise results in a faulty cost-benefit analysis.

## **2. The Regulatory Assessment Substantially Underestimates Costs for Existing Vessels**

TSAC does not take issue with the estimates as applied to new towing vessels. However, TSAC believes the Regulatory Assessment prepared for the SNPRM severely underestimates the cost to install a fixed fire suppression system on an existing towing vessel. Some TSAC members have obtained estimates to install a fixed fire suppression system on some of their existing vessels and found that the cost, particularly for the larger towing vessels, approximates on average an amount closer to the highest amount predicted for these towing vessels rather than the average cited in the Regulatory Assessment.

The Regulatory Assessment estimates that the cost to install a fixed fire suppression system on towing vessels is approximately \$25,000 for a towing vessel under 24 meters in length and \$55,000 for a towing vessel over 24 meters in length. The Regulatory Assessment assumes no difference in cost between installation of such a system on a new towing vessel versus installation by retrofitting on an existing towing vessel. TSAC believes that an assumption that costs are comparable between installation on new and existing towing vessels is naïve and uninformed.

Several TSAC and Working Group members submitted estimated costs to retrofit existing vessels with a fixed fire suppression system. The estimates we have received indicate that the Coast Guard's cost estimates may be significantly understated. Moreover, the Coast Guard's cost data fail to take into account some cost components, such as design of structural alterations, electrical work, new storage lockers, need for emergency generators, and the like, that may increase the overall cost of retrofitting by a significant amount. We anticipate that these members will submit comments directly to the docket setting forth in detail the estimates

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<sup>8</sup> As we note below, the Regulatory Assessment states that there were 12 injuries resulting from 6 casualty cases; however, a review of the 105 casualty cases indicates that only 7 injuries resulted from these 6 cases. Because the Coast Guard calculated the value of injuries avoided based on the number of injuries which occurred (and whether they were minor or serious), the Coast Guard has overstated the present value of all injuries avoided.

they have received, but a summary of these estimates is included in Attachment III to these comments. This summary shows:

- The average cost of installation of the fixed fire suppression system for most towing vessels is approximately \$68,314.
- The costs of design and structural alterations can be as much as \$40,000 for a large towing vessel or a towing vessel originally built with many holes and spaces in the engine room or an engine room not large enough to accommodate the additional bottles needed for a fixed system.

### **3. Costs For Revenue Lost Are Based on a False and Inappropriate Assumption**

The Regulatory Assessment assumes that operators with more than one towing vessel will face less costs in out-of-service time (i.e., lost revenue) on a sliding scale than operators with only one towing vessel. For instance, the Regulatory Assessment states that an owner with more than one towing vessel may be able to put another vessel into service. There is no support stated for this assumption other than the presumptive reasoning itself supplied by the Coast Guard.<sup>9</sup> Most operators do not have extra towing vessels tied up and on standby just waiting to be put in service whenever another vessel is taken out of service. The Regulatory Assessment further states that the revenue lost by one vessel could become the revenue gained by another vessel and the owner might not lose revenue. Again, this is a false and deceptive assumption. The cost to an operator from lost revenue is still a cost – whether the operator is able to make it up in some other operation or not.

The Regulatory Assessment also misstates the number of existing towing vessels each year that would require the installation of a fixed fire suppression system. Out of the total number of existing documented towing vessels (6641) in 1999,<sup>10</sup> the Regulatory Assessment calculates the number (4467) that would not be exempt from the FFES requirement as an assist tug or a tug involved in pollution response. The Regulatory Assessment then assumes, without any stated foundation, that 23% of these vessels already have a fixed fire suppression system installed. The remainder (3440) would be required to install a fixed system within the 5-year grace period. Of the remainder, the Regulatory Assessment calculates that 68% (or 2339) are less than 24 meters in length and 32% (or 1101) are 24 meters or more in length. The Regulatory Assessment then calculates the number of vessels per year (688) that would be installing a fixed

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<sup>9</sup> We are also not convinced that this assumption meets the requirements of OMB Circular No. A-94 (“Guidance and Discount Rates for Benefit-Cost Analysis of Federal Programs”) (1992), or the guidance set forth in “Regulatory Impact Analysis Guidance,” REGULATORY PROGRAM OF THE UNITED STATES GOVERNMENT.

<sup>10</sup> TSAC notes that in the July 1999 Regulatory Assessment for Fire Protection Measures for Towing Vessels [USCG-1998-4445], the Coast Guard estimated that there were a total of 7,930 documented towing vessels. It is difficult to see how there could be a discrepancy of 1289 towing vessels when the same data from the same database is being used to analyze two different, but related rulemakings.

fire suppression system.<sup>11</sup> After discounting this number for new vessels put into service that are replacements for towing vessels taken out of service, the number of towing vessels taken out of service for installation would be 670.

The Coast Guard assumed that the daily revenue lost by a small towing vessel would be \$4000 and the daily revenue lost by each large towing vessel would be \$9000. The Regulatory Assessment further estimates that out-of-service time would be four days for a small towing vessel and 6 days for a large towing vessel.<sup>12</sup> This amounts to lost revenue for a small towing vessel of \$16,000 and lost revenue for a large towing vessel of \$36,000.

Since the Regulatory Assessment does not provide any empirical evidence to support the assumption made by the Coast Guard that the ability to avoid lost revenue is dependent upon the number of towing vessels owned, TSAC recommends that the full amount calculated on a vessel-be-vessel basis for lost revenue should be set forth. On this basis, using the Coast Guard's own numbers, the annual cost in lost revenue would be as follows:

| # vessels total |   | percent large or small |   | # vessels large or small |   | daily revenue lost |   | total revenue lost annually |
|-----------------|---|------------------------|---|--------------------------|---|--------------------|---|-----------------------------|
| 670             | x | 68%                    | = | 456                      | x | \$36,000           | = | \$16,416,000                |
| 670             | x | 68%                    | = | 215                      | x | \$16,000           | = | \$3,440,000                 |
|                 |   |                        |   |                          |   | TOTAL              | = | \$19,856,000                |

The above total annual lost revenue compares with annual lost revenue of \$1,305,696 set forth in the Regulatory Assessment. Therefore, if the Coast Guard's assumption is erroneous that lost revenue is dependent upon the number of vessels owned, and we believe it is, then the Coast Guard's cost analysis for lost revenue is understated by a factor of more than 15.

#### **4. Casualty Data Do Not Support the Requirement for Fixed Systems**

The SNPRM states that the purpose of changing the approach from manual fire fighting equipment to fixed fire suppression systems is safety of the crews of towing vessels. However, in a vast majority of the casualty cases analyzed by the Coast Guard in the Regulatory Assessment, engine room fires were extinguished without death or any personal injury, and without the use of fixed fire suppression systems. Thus, there does not appear to be a need for the approach adopted by the Coast Guard in the SNPRM.

<sup>11</sup> The Regulatory Assessment then discounts this annual number by another 18 vessels to 670, claiming that 18 of the 688 vessels each year would be new vessels for which there would not be any lost revenue.

<sup>12</sup> One of TSAC's members estimates that out-of-service time for its towing vessels, particularly those requiring substantial structural modifications, would be an additional 14 ½ days beyond normal drydocking time. Normal drydock time for this operator is 10 days.

In its Regulatory Assessment, the Coast Guard makes the following assumptions regarding personal injury and environmental damage:

3. The Regulatory Assessment assumes that 42% of losses would be reduced by installation of a fixed fire suppression system.
4. During the 1992 to 1996 analysis period, the Regulatory Assessment identifies 19,791 barrels of oil spilled as a result of 5 engine room fires. However, the vast majority of the oil spilled, i.e., 19,714 barrels, resulted from the SCANDIA/NORTH CAPE incident.<sup>13</sup> Eliminating this one anomalous incident from the analysis indicates that only 78 barrels were spilled as a result of engine room fires.

TSAC has analyzed the 105 engine room fire casualty cases referenced in the Regulatory Assessment. These cases occurred during 1992 to 1996.<sup>14</sup> TSAC concludes that such data do not support the need for mandatory installation of fixed fire suppression systems on towing vessels. Our analysis is set forth in Attachments I and II to these comments. Attachment I is a summary of TSAC's analysis of the 105 casualty cases referenced in the Regulatory Assessment, and Attachment II is a case by case listing of each casualty, based on both the individual casualty reports themselves and the Coast Guard's Regulatory Assessment, indicating whether the fire was extinguished, the number of injuries which occurred, the amount of damages sustained, etc. Our analysis shows the following:

- Approximately 80% of the engine room fires cited in the Regulatory Assessment (83 out of 105 cases) were extinguished using manual or portable equipment or the services of a local fire department – without use of a fixed fire suppression system.
- Only 7 injuries resulted from 6 of the casualty cases.<sup>15</sup>
- No deaths resulted from any of the casualty cases.

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<sup>13</sup> TSAC notes that the barrels spilled from the NORTH CAPE – 19,714 barrels – have been used repeatedly to justify the imposition of four different regulatory measures: Emergency Control Measures [USCG-1998-4443]; Fire Protection [USCG-1998-4445]; Voyage Planning [USCG 2000-6931] and Fire Suppression [USCG-2000-6931]. If the alleged benefits in terms of effective pollution prevented from all four of these measures are quantified, the total number of cumulative barrels avoided or pollution prevented from the NORTH CAPE incident alone would be 26,259 barrels – or 6,545 more barrels than what actually was spilled during the NORTH CAPE incident.

<sup>14</sup> TSAC notes that all of these casualties occurred before the requirement for firefighting training was adopted in 1996.

<sup>15</sup> The Regulatory Assessment claims that 12 injuries – 7 minor and 5 serious – occurred in the 105 cases. However, Appendix B of the Regulatory Assessment only lists 7 injuries total. If the 35.7% reduction in injuries is applied to this number, the result is a reduction of less than 3 injuries total – at a cost of almost \$110 million using the Coast Guard's own numbers.

- Approximately 60% of the cases (63 out of 105 cases) resulted in damages of less than \$10,000 (compared with an average fixed system cost per vessel of either \$25,000 or \$55,000 using Coast Guard estimated costs).
- Less than 5% of the cases (5 out of 105 cases) resulted in any pollution.
- Excluding barrels spilled from the NORTH CAPE, only 78.21 barrels of oil were spilled as a result of 4 cases, and in each of those 4 cases, the largest amount spilled was 36 barrels.
- If the 15% reduction in losses due to voyage planning is taken into account with the 42% reduction in losses due to fixed fire suppression systems, the overall effective rate of reduction drops to 35.7%  $[(100\% - 15\%) \times 42\% = 35.7\%]$ .

Even the Coast Guard's own analysis of the potential benefits of fixed fire suppression systems indicates that such systems would have reduced losses by 10% or less in 54% of the cases (and this percentage includes the NORTH CAPE incident).

## 5. **A Fixed System Would Not Have Prevented the North Cape Oil Spill**

The preamble to the SNPRM explains, in the "Background and Purpose" section, the fire suppression rules result from legislation adopted in 1996 after "the tugboat SCANDIA, towing the oil barge NORTH CAPE, caught fire five miles off the coast of Rhode Island. The crew could not control the fire, and without power they were unable to prevent the barge carrying 4 million gallons of oil from grounding and spilling about a quarter of its contents into the coastal waters." The second sentence in this explanation is critical, yet appears to be an oversight by the Coast Guard in its focus on the use of fixed fire suppression systems in this SNPRM.

Paraphrasing the preamble, it states that the crew could not control the fire and without power they were unable to prevent the grounding and subsequent oil spill. The Coast Guard in this SNPRM has proposed an approach which the agency asserts would enable the crew to control any engine room fire that may break out, but the approach chosen would also cause the towing vessel to lose all power. Thus, if the SCANDIA had installed a fixed fire suppression system before the incident in 1996, the crew may have been able to bring the fire in the engine room under control, but the oil spill still likely would still have resulted. That is because the tugboat would have lost power when the fixed fire suppression system was triggered and, given the gale storm conditions at the time of the incident, the crew would have been unable to keep the NORTH CAPE from grounding.

Thus, the very factor that ensured the occurrence of the NORTH CAPE spill – the loss of the SCANDIA's power – now is effectively being mandated by the Coast Guard through the approach adopted in the SNPRM: mandatory installation of fixed fire suppression systems on all towing vessels. TSAC believes the loss of power when a fixed fire suppression system is triggered must be given further consideration before it is mandated for all towing vessels.

Moreover, given the length of time between discovery and the time the fixed fire suppression agent would have been released, major components of the engine room still would have been disabled. While the SCANDIA crew may have been able to remain on board the tug, the NORTH CAPE's inability to anchor would have remained a major factor in causing the pollution incident.

**C. Structural Difficulties and Design Problems Have Not Been Adequately Considered**

TSAC believes that design and structural alteration costs and problems have not been adequately considered by the Coast Guard in adopting a fixed fire suppression system requirement rather than a manual firefighting system. For instance, TSAC has found no discussion in the preamble of any of the following problems that have been identified by our members and working group participants:

- Where would an operator locate all of the CO<sub>2</sub> bottles that would be required for installation of a CO<sub>2</sub> system (one operator estimated he would need to locate 19 bottles of CO<sub>2</sub> for a fixed system he was planning to install) if the engine room is too small to accommodate them;
- Are new stability concerns created by the structural alterations that may be needed for installation of a new fixed fire suppression system?
- Does the installation of a fixed system require the installation of automatic dampers to close off fans and blowers (automatic louvers are very expensive) or will manual fans and blowers be acceptable?
- Does the proposal assume the use of automatic door closers and, if so, are these supposed to be fire doors?
- If fire doors are expected to be used, who is supposed to close them?
- Are there any limits on how long the piping for the fire suppression agent can be?
- What are the estimated costs to install fire doors?
- What are the estimated costs for ABS plan approval for ABS-classed vessels, for engineering and drawing costs, for bulkhead penetrations, for wiring diagrams, and for other piping diagrams and plans?

**D. Additional Concerns**

TSAC members have identified the following additional concerns that must be addressed by the Coast Guard before any final rule on fire suppression systems is published:

- Will existing fixed fire suppression systems on existing vessels be grandfathered?
- Will the Coast Guard allow the use of fixed fire suppression agents that have been approved by IMO under SOLAS IV but not by the Coast Guard?
- What risk assessment has been conducted by the requirement to include a fixed fire suppression system that (such as with CO2) has the potential to significantly harm human beings?
- Since the generators for many towing vessels are located in the engine room, and would be adversely affected by triggering of a fixed fire suppression system, what is the cost in terms of additional risk of injury, death and property or environmental damage that may occur when all power to the towing vessel is shut-off during an engine room fire with a fixed fire suppression system?

#### **E. Coast Guard's Original Approach in the NPRM is Recommended**

In 1997, TSAC submitted Recommendation No. 106 to the Coast Guard. This recommendation proposed that the Coast Guard adopt fire suppression measures such as fire detection systems, semi-portable fire extinguishers, training of crewmembers, and fixed or portable fire pumps for the protection of existing towing vessels and for new towing vessels under 24 meters in length, regardless of cargoes transported. For new towing vessels 24 meters and over in length, TSAC recommended that these vessels be required to have a fixed fire pump, a remote main engine shutdown and fuel shutoff, and a fixed fire suppression system. The Coast Guard adopted this basic approach, with minor adjustments, in the NPRM published in October 1997. TSAC put a lot of work into this recommendation, giving serious and due consideration to personnel and safety issues and pollution prevention. We hate to think that our previous work was for naught. Moreover, these comments indicate that we have serious and strong concerns about the approach the Coast Guard has adopted in the SNPRM.

Except for the size threshold for new towing vessels, and except for equipment requirements already adopted in the final rule on Fire Protection Systems, TSAC recommends that the Coast Guard revert to the approach first proposed in the NPRM whereby existing towing vessels could comply with fire suppression system requirements through either a fixed system or a manual system. Existing vessels should continue to have the option of employing manual firefighting measures unless and until the Coast Guard can demonstrate through its cost/benefit and casualty analyses that there are significant safety benefits and damage prevention gains to be made.

The statute requires the Coast Guard to consult with TSAC in undertaking its rulemaking. At no time prior to issuance of the SNPRM did the Coast Guard explain to TSAC why it was changing its course and adopting a singular requirement of a fixed fire suppression system rather than the option of manual fire suppression measures. The SNPRM similarly fails to a rational explanation. TSAC encourages the Coast Guard to continue working with us before this

rulemaking is finalized so that the consultation mandates of the Act can be met and a satisfactory and justifiable rulemaking can result.

### **III. Final Recommendations**

1. With respect to voyage planning, TSAC supports the provisions of the SNPRM with the changes we have set forth in section I above.
2. For both voyage planning and fire suppression, the Coast Guard must clarify the categories of towing vessels that are exempt from the requirements, including those engaged in assistance towing, harbor assist operations, pollution response, fleeting duties and those operating in limited geographical areas, by stating expressly such exemptions in the regulatory text.
3. With respect to fire suppression, TSAC supports the application of the provisions in the SNPRM only for new towing vessels, except those operating exclusively on inland rivers and canals.
4. Because the justification has not been demonstrated for adopting a requirement for installation of a fixed fire suppression system on existing towing vessels, TSAC does not support this requirement. TSAC believes the Coast Guard should reconsider this approach and instead provide the option to allow owners to install either a fixed fire suppression system or the list of equipment that was proposed initially in the fire suppression NPRM published in October 1997. While TSAC originally proposed in Recommendation No. 106 that these equipment requirements be applied only to towing vessels of 24 meters or longer in length, TSAC appreciates that the 1996 Coast Guard Authorization Act did not provide any exemptions based on length of the vessel; accordingly, we have no objection to the imposition of the requirements (not previously adopted) to all non-exempt existing towing vessels regardless of length.
5. The next rulemaking issuance for this docket should be either another supplemental notice of proposed rulemaking or an interim final rule with a request for further comments.

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TSAC appreciates the opportunity to provide these comments in furtherance of our charter as a safety advisory committee to the Coast Guard and the Department of Transportation for towing vessel safety.

Respectfully,

TOWING SAFETY ADVISORY COMMITTEE

Jeffrey E. Parker  
Chairman

## TSAC ANALYSIS OF USCG Casualty Data--Engine Room Fires: 105 Cases

### FIRES EXTINGUISHED / NOT EXTINGUISHED

|                      | # Extinguished | # Not Extinguished | # Not Specified* | Total #     | Percent     |
|----------------------|----------------|--------------------|------------------|-------------|-------------|
| Inland               | 51             | 6                  | 22               | 79          | 75%         |
| Ocean/Coastal        | 13             | 5                  | 8                | 26          | 25%         |
| <b>GRAND TOTALS:</b> | <b>64</b>      | <b>11</b>          | <b>30</b>        | <b>105</b>  | <b>100%</b> |
| Percentage:          | <b>61%</b>     | <b>10%</b>         | <b>29%</b>       | <b>100%</b> |             |

\*Not Specified=the casualty reports provided in the docket did not state whether the fire was extinguished.

65% of all inland cases extinguished

28% of inland cases not specified as extinguished or not

8% of all inland cases not extinguished--only 6 cases

The fires that were extinguished were put out by crewmembers using portable fire extinguishers, fire pumps and hoses and/or with the help of local fire departments—without a requirement for fixed fire suppression system. (Among the 51 Inland cases, there was only one reported injury.)

19 of the 30 "Not Specified" casualties incurred damages equal to or less than \$8,500 and can reasonably be assumed to have been extinguished. (The next lowest damage amount is \$35,000.)

Adding the 19 "Not Specified" but assumed extinguished fires to the 64 extinguished fires, equals a total of 83 extinguished fires out of the 105 cases.

**79% of the engine room fires were extinguished. (83/105)**

### INJURIES

**No deaths resulted from any of the 105 cases.**

**There were only 7 injuries which occurred during 6 of the 105 engine room fires.**

Note: Page 21 of the Regulatory Assessment says:

"Seven of the injuries were minor and 5 were serious. See Appendix B."

There is a footnote after this statement that reads: "The 12 injuries were from 6 casualty cases."

However, our review of Appendix B, as mentioned above, indicates that there were only 7 injuries among 6 casualty cases.

## TSAC Analysis (cont.)

### DAMAGES

37 of the 105 cases (35%) resulted in damages valued at less than or equal to \$1,000.

12 of the 105 cases (11.4%) resulted in damages valued between \$1,001 - \$3,000.

8 of the 105 cases (7.6%) resulted in damages valued between \$3,001 - \$5,000.

6 of the 105 cases (5.7%) resulted in damages valued between \$5,001 - \$10,000.

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**63 of the 105 cases (60%) resulted in damages of less than \$10,000.**

### POLLUTION

Of the 105 casualties, only 5 resulted in pollution with a total of 19,792 barrels spilled.

**Excluding the Scandia casualty, only 78.21 bbls were spilled.**

None of the remaining 4 pollution incidents resulted in spills greater than 36 bbls.

(The Scandia/North Cape casualty spilled 19,714 bbls.)

### EFFECTIVENESS OF FIRE-SUPPRESSION

Even the Coast Guard's own analysis of the potential benefits of fixed fire suppression system shows that such systems would have reduced losses by only 10 percent or less (including not at all) in 57 of the 103 engine room fires aboard towing vessels (54 percent). (There is no analysis for 2 of the 105 cases.)

Of particular interest is the Coast Guard's assessment of the benefits a fixed fire suppression system would have provided aboard the Scandia: The Coast Guard's analysis indicates that a fixed fire suppression system would have reduced the losses by only 10 percent in this case.

(See Appendix B and Page 15 of the Regulatory Assessment.)

### SOURCES

**Regulatory Assessment and Initial Regulatory Flexibility Analysis, SNPRM Towing Vessel Safety: Fire Suppression Systems and Voyage Planning for Towing Vessels (USCG-2000-6931-8)**

**Casualty Reports Supporting Appendix B of the Regulatory Assessment and Initial Regulatory Flexibility Analysis  
(USCG-2000-6931-17, USCG-2000-6931-18, USCG-2000-6931-19)**

## USCG Casualty Reports--Engine Room Fires: 105 Cases

|    | I/O* | Waterbody   | Case # | State | Fire Extinguished? | How? (Details)  | Injuries | Damages (\$) | Barrels Spilled |
|----|------|---|--------|-------|--------------------|---|----------|--------------|-----------------|
| 1  | I    | Freeport Ship Channel                                     | 98     | FL    | Y                  | Fire was extinguished within a couple of minutes.   | 0        | 05,000       | 0.00            |
| 2  | I    | Corpus Christi Ship Channel & Harbor                      | 6      | TX    | Y                  | Crew extinguished fire quickly  | 0        | 2,000        | 0.00            |
| 3  | I    | New York Harbor Upper Bay/Off Con Hook, NJ                | 9      | NY    | Y                  | Tug's engineer attempted to extinguish the fire w/CO2 extinguisher  | 0        | 2,000        | 0.00            |
| 4  | I    | Corpus Christi Ship Channel & Harbor/Inner Harbor by OD-4 | 23     | TX    | Y                  | Fire was extinguished with B-II dry chemical extinguisher and water hose.   | 0        | 0            | 0.00            |
| 5  | I    | New York Harbor Upper Bay/Bayonne Marine Terminal         | 49     | NJ    | Y                  | Crew immediately extinguished the fire. Barge was safely moored.  | 0        | 2,000        | 0.00            |
| 6  | I    | Navigable Waters NEC/New Haven Harbor                     | 56     | CT    | Y                  | The chief engineer answered an alarm for a boiler fire. He alerted the crew and secured the boiler power. The tug's crew, local fire department and crew from a nearby barge extinguished the fire. | 0        | 19,000       | 0.00            |
| 7  | I    | Houston Ship Channel                                      | 63     | TX    | Y                  | The fire was extinguished rapidly with a portable fire extinguisher.  | 0        | 100          | 0.00            |
| 8  | I    | Houston Ship Channel                                      | 67     |       | Y                  | UTV Mamaru was moored at GATX Galena Park Barge Dock #2. An attempt to extinguish fire by the crew was unsuccessful. GATX fire personnel arrived on scene and extinguished fire.                    | 0        | 9,000        | 0.00            |
| 9  | I    | Galveston Ship Channel                                    | 82     | TX    | Y                  | Crew extinguished fire by use of fire extinguishers and fire hose. Local FD notified by assistance not needed.  | 0        | 5,000        | 0.00            |
| 10 | I    | Lower Mississippi River                                   | 1      |       | Y                  | Timely and correct action by crew and proper placement of safety equip. Equipment extremely effective   | 0        | 500          | 0.00            |
| 11 | I    | Ohio River  | 4      | OH    | Y                  | Local fire department extinguished fire when vessel pushed into river bank  | 0        | 500          | 0.00            |
| 12 | I    | St. Mary's River  | 5      | MI    | Y                  | 2 Portable B-II CO-2 used satisfactorily  | 0        | 20,000       | 0.00            |
| 13 | I    | Narragansett Bay  | 8      | RI    | Y                  | NS  | 0        | 900,000      | 0.00            |
| 14 | I    | Navigable Waters NEC/Clarence Straits                     | 13     | AK    | Y                  | The fire was partially extinguished when a dry chemical extinguisher near the fire exploded. Crew members then extinguished the fire.   | 0        | 150,000      | 0.00            |
| 15 | I    | Savannah River  | 14     | GA    | Y                  | Tug moved to CB3 where Garden City Fire Department put fire out. Crew was not able to access ship's fire pump, due to location in engine room   | 0        | 500,000      | 0.00            |

\* Inland ("I"); Ocean ("O")

## USCG Casualty Reports--Engine Room Fires: 105 Cases

|    | I/O* | Waterbody                                  | Case # | State | Fire Extinguished? | How? (Details)  | Injuries | Damages (\$) | Barrels Spilled |
|----|------|--|--------|-------|--------------------|---|----------|--------------|-----------------|
| 16 | I    | Ohio River                                 | 15     | WV    | Y                  | 2 Nearby M/V's tied off to MS Jan and secured her tow/commenced firefighting ops. Heavy smoke. Local F.D. extinguished fire. Portable equipment was out of range due to heat/smoke. Water/foam hoses from other boats/local F.D. effective at extinguishing. Crew assisted crews of 2 M/V's on scene. Hampered by lack of any type of SCBA or foam. | 0        | 75,000       | 0.00            |
| 17 | I    | Lower Mississippi River                    | 17     | LA    | Y                  | This was a flash fire that lasted approximately 30 seconds  | 0        | 50           | 0.00            |
| 18 | I    | Lower Mississippi River                    | 20     |       | Y                  | The fire was extinguished, engine restarted and the tow continued.  | 0        | 1,000        | 0.00            |
| 19 | I    | Lower Mississippi River                    | 21     |       | Y                  | Vessel's fixed CO2 system was successful in fully extinguishing the engine room fire. Fixed CO2 system coupled with crew's firefighting efforts effectively extinguished the fire.  | 0        | 50,000       | 0.00            |
| 20 | I    | Houston Ship Channel                       | 24     | TX    | Y                  | CO2 used to extinguish fire.  | 0        | 3,500        | 0.00            |
| 21 | I    | Navigable Waters NEC                       | 25     | IL    | Y                  | Crew abandoned vessel, Joliet F.D. & CG responded, M/V CHICAGO PEACE assisted with tow. Fire quickly extinguished.  | 0        | 1,500        | 0.00            |
| 22 | I    | Chesapeake Bay/3 NM East of Windmill Point | 27     | VA    | Y                  | The crew extinguished the fire.   | 0        | 5,000        | 0.00            |
| 23 | I    | Houston Ship Channel                       | 28     | TX    | Y                  | Crew successfully extinguished fire.  | 0        | 15,000       | 0.00            |
| 24 | I    | Tennessee River                            | 29     | AL    | Y                  | ACOE reported M/V HONEY BEAR caught fire while crewmen were welding or cutting in the engine compartment. Local fire dept. responded. Incident determined to be oily rags smoldering causing smoke, no fire. Incident does not meet reporting criteria in 46 CFR 4.05-1. Vsl was moored and not in operation at the time of the incident.           | 0        | 0            | 0.00            |
| 25 | I    | Tampa Bay                                  | 30     | FL    | Y                  | Crew was unsuccessful in extinguishing with CO2 and requested assistance from local fire department who put out the fire.   | 0        | 10,000       | 0.00            |
| 26 | I    | Port Allen Route                           | 32     | LA    | Y                  | The Halon extinguishing system failed to activate automatically. It was energized manually by the Master but failed to put out the fire. The M/V WOLF BLESSEY pulled alongside and the local fire dept arrived. Within minutes of their arrival, the fire was put out.  | 0        | 300,000      | 0.00            |
| 27 | I    | Tombigbee River                            | 33     |       | Y                  | While fighting the fire, the master of the vessel fell down the engine room stairs, bruising his right shoulder.  | 0        | 10,000       | 0.00            |
| 28 | I    | Lower Mississippi River                    | 36     | MS    | Y                  | The fire . . . was contained to the port engine   | 0        | 6,000        | 0.00            |
| 29 | I    | Willamette River                           | 39     | OR    | Y                  | The tug immediately secured to the Terminal 1 Dock in Portland where Portland fire bureau firefighters extinguished the smoke source.   | 0        | 2,500        | 0.00            |
| 30 | I    | Upper Mississippi River                    | 43     | MO    | Y                  | The M/V KEVIN FLOWERS was tied up for the winter. The fire was contained in the lower deck and was extinguished by the local fire department.   | 0        | 168,000      | 0.00            |

## USCG Casualty Reports--Engine Room Fires: 105 Cases

|    | I/O* | Waterbody                          | Case # | State | Fire Extinguished? | How? (Details)   | Injuries | Damages (\$) | Barrels Spilled |
|----|------|------------------------------------|--------|-------|--------------------|--|----------|--------------|-----------------|
| 31 | I    | Tennessee River                    | 58     |       | Y                  | Fire was contained and extinguished within 30 minutes.   | 0        | 75,000       | 0.00            |
| 32 | I    | Delaware River/Coastal Eagle Point | 59     | NJ    | Y                  | Fire was extinguished using portable fire extinguishers.   | 0        | 15,000       | 0.00            |
| 33 | I    | Lower Mississippi River            | 60     | LA    | Y                  | The fire was put out with a fire extinguisher and the damage was minimal.  | 0        | 1,500        | 0.00            |
| 34 | I    | Upper Mississippi River            | 64     |       | Y                  | The fire was immediately extinguished with no damage.  | 0        | 25           | 0.00            |
| 35 | I    | Upper Mississippi River            | 65     |       | Y                  | Crew member sprayed the hot engine with a CO2 extinguisher which cause [sic] the engine cover to rupture.  | 0        | 500          | 0.00            |
| 36 | I    | Lower Mississippi River            | 66     |       | Y                  | The local fire department was called and the fire was extinguished.  | 0        | 65,000       | 0.00            |
| 37 | I    | Monongahela River                  | 69     | PA    | Y                  | Crew members extinguish the fire with a portable fire extinguisher.  | 0        | 500          | 0.00            |
| 38 | I    | Navigable Waters NEC               | 70     | IL    | Y                  | Extinguished with no damage.   | 0        | 0            | 0.00            |
| 39 | I    | Ohio River                         | 72     | WV    | Y                  | Vessel fixed fire system was discharged however was ineffective due to doors and windows being open. The fire was eventually extinguished by fire hoses. | 0        | 150,000      | 0.00            |
| 40 | I    | Lower Mississippi River            | 76     | LA    | Y                  | Fire extinguishers were used to put out the fire. Engineer shut off engine and fuel supply immediately.  | 0        | 5,000        | 0.00            |
| 41 | I    | Lower Mississippi River            | 78     | LA    | Y                  | Quickly extinguished by the crew.  | 1        | 500          | 0.00            |
| 42 | I    | Ohio River                         | 81     | IN    | Y                  | The fire started at 0325 and was extinguished right away.  | 0        | 500          | 0.00            |
| 43 | I    | Ohio River                         | 84     | IN    | Y                  | Quickly extinguished by crew.  | 0        | 5,000        | 0.00            |
| 44 | I    | Upper Mississippi River            | 85     |       | Y                  | The port engine was shut down and the fire went out.   | 0        | 500          | 0.00            |
| 45 | I    | Lower Mississippi River            | 89     | TN    | Y                  | A small fire that was immediately extinguished.  | 0        | 10,000       | 0.00            |
| 46 | I    | Lower Mississippi River            | 93     | LA    | Y                  | The fire was extinguished and the vessel shoved up into the bank waiting repairs.  | 0        | 2,000        | 0.00            |
| 47 | I    | Kill Van Kull                      | 94     | NY    | Y                  | The fire was immediately put out using a portable CO2 extinguisher.  | 0        | 100          | 0.00            |
| 48 | I    | Lower Mississippi River            | 95     | TN    | Y                  | The fire was extinguished by the crew in approx. 15 minutes.   | 0        | 1,000        | 0.00            |
| 49 | I    | Prince William Sound               | 97     |       | Y                  | Fire quickly extinguished by fixed E/R CO2 system. Fire reflashd 45 minutes later and re-extinguished.   | 0        | 150,000      | 0.00            |
| 50 | I    | Lower Mississippi River            | 31     | LA    | Y                  | The fire was put out with onboard fire extinguishers (2 Halon, 4 dry chem.) plus fire hoses from Pointe Coupee as well as two assist vessels.            | 0        | 60,000       | 0.00            |
| 51 | I    | Casco Bay                          | 68     | ME    | Y                  | The crew of the vessel put out the smoke and the vessel was safely moored at its pier.   | 0        | 500          | 0.00            |

## USCG Casualty Reports--Engine Room Fires: 105 Cases

|   | I/O* | Waterbody                   | Case # | State | Fire Extinguished? | How? (Details)   | Injuries | Damages (\$) | Barrels Spilled |
|---|------|-----------------------------|--------|-------|--------------------|--|----------|--------------|-----------------|
| 1 | I    | Houston Ship Channel        | 104    | TX    | N                  | UTV BULL is considered a total loss due to fire to all compartments of the vessel.   | 0        | 65,000       | 0.00            |
| 2 | I    | Ohio River/Powhatan Landing | 34     | OH    | N                  | This was a moored, unmanned M/V, fully engulfed in flames, considered a total loss   | 0        | 50,000       | 0.00            |
| 3 | I    | Lower Mississippi River     | 44     | LA    | N                  | The heat and smoke coming from the engine room made it impossible for the master of the vessel to fight the fire. The M/V ROY S. KELLY, a fire boat, arrived on scene at 0815 and assisted Conti Fleet personnel and crewmembers in fighting the fire. At 1002 the M/V TED J. EYMARD SR. sank due to fire fighting water not pumped from the burning vessel. | 0        | 300,000      | 0.00            |
| 4 | I    | Lower Mississippi River     | 51     | LA    | N                  | The crew heard the Engine Room fire alarm sound and investigated. The engineer opened the door to the engine room and found a fully involved fire at the aft end of the port main engine. The Engineer notified the operator. Access to the engine room nor closing the door was possible due to heat and smoke. Crew abandoned to M/V LEO alongside.        | 0        | 650,000      | 0.00            |
| 5 | I    | Ohio River                  | 55     | KY    | N                  | By the time the fire was detected it was uncontrollable. Assistance from M/V Valvoline was given. Fire apparatus from the Lake Dreamland Fire Department responded. Vessel was nosed into bank and crew abandoned. Vessel was considered a total constructive loss (150K).   | 0        | 100,000      | 0.00            |
| 6 | I    | Upper Mississippi River     | 101    | MN    | N                  | The crew was unable to enter the engine room due to smoke and flames. The captain evacuated his crew to the barges. They were picked up by fire rescue. The vessel was moved to RM 814.3 (place stern in shallow water), it burned for 2 days.   | 0        | 150,000      | 16.67           |

## USCG Casualty Reports--Engine Room Fires: 105 Cases

|    | I/O* | Waterbody                                  | Case # | State | Fire Extinguished? | How? (Details)  | Injuries | Damages (\$) | Barrels Spilled |
|----|------|--|--------|-------|--------------------|---|----------|--------------|-----------------|
| 1  | I    | New York Harbor Upper Bay                  | 10     | NY    | NS                 | Crankcase explosion.  | 1        | 200,000      | 0.00            |
| 2  | I    | Boston Harbor                              | 45     | BA    | NS                 | Two crew members abandoned the tug and swam to shore to call for assistance. Tug was towed to Pier One in East Boston, MA.  | 1        | 200,000      | 0.00            |
| 3  | I    | Houston Ship Channel                       | 52     | TX    | NS                 | This vessel was moored at City Dock #1.   | 0        | 3,000        | 0.00            |
| 4  | I    | Potomac River/Mouth of Breton Bay          | 7      | MD    | NS                 |   | 0        | 320,000      | 0.00            |
| 5  | I    | Navigable Waters NEC/Lake Coeur D'Alene    | 12     | ID    | NS                 |   | 0        | 8,500        | 0.00            |
| 6  | I    | Atchafalaya River                          | 16     |       | NS                 |   | 0        | 200          | 0.00            |
| 7  | I    | Arkansas River                             | 22     |       | NS                 |   | 0        | 750,000      | 0.00            |
| 8  | I    | Ohio River                                 | 37     | OH    | NS                 |   | 0        | 3,500        | 0.00            |
| 9  | I    | Navigable Waters NEC/Tchefuncta River      | 38     | LS    | NS                 |   | 0        | 100,000      | 0.00            |
| 10 | I    | Navigable Waters NEC/Crystal River Channel | 40     | FL    | NS                 |   | 0        | 50,000       | 0.00            |
| 11 | I    | Ohio River                                 | 53     | IN    | NS                 | Vessel was pushing three double skin tank barges, and was able to make it to the fleeting area in Evansville, IN under its own power.   | 0        | 2,000        | 0.00            |
| 12 | I    | Lower Mississippi River                    | 57     | MS    | NS                 |   | 0        | 1,500        | 0.00            |
| 13 | I    | Columbia River                             | 79     | WA    | NS                 |   | 0        | 3,000        | 0.00            |
| 14 | I    | Lower Mississippi River                    | 87     | MS    | NS                 |   | 0        | 1,000        | 0.00            |
| 15 | I    | Tombigbee River                            | 90     | AL    | NS                 | Vapors in fuel line caused explosion in crankcase during repairs.   | 2        | 1,000        | 0.00            |
| 16 | I    | Upper Mississippi River                    | 92     |       | NS                 | Vsl was having new engines installed and was using heat lamps to dry the chalkfast, causing a fire.   | 0        | 60,000       | 0.00            |
| 17 | I    | East River                                 | 96     | NY    | NS                 | Main generator electrical fire.   | 0        | 500          | 0.00            |
| 18 | I    | Ohio River                                 | 100    | KY    | NS                 | M/V CITY OF PITTSBURGH was moored on left bank of river with engines on idle and out of gear. Port clutch began smoking. Repairs made prior to getting underway.  | 0        | 0            | 0.00            |
| 19 | I    | Lower Mississippi River                    | 102    | MS    | NS                 | Explosion in port main engine.  | 0        | 100,000      | 16.90           |
| 20 | I    | Kill Van Kull                              | 103    |       | NS                 | Main propulsion generator failure; smoke and sparks occurred.   | 0        | 1,000        | 0.00            |
| 21 | I    | Mobile Bay                                 | 77     | AL    | NS                 | It was determined that portable FE's would not be effective & none were expended in combating the fire. The on board equipment was not employed. Smoke limited/negated preliminary efforts of crew. Smoke had limited impact of more determined efforts of CG and Mobile Fire Dept. boat. | 0        | 800,000      | 0.00            |
| 22 | I    | Delaware Bay/Pier 3C Sun Oil Marcus Hook   | 18     | PA    | NS                 | While assisting the C/E fight the fire in the E/R the C/M injured his shoulder when he inadvertently ran into the E/R bulkhead.   | 1        | 800          | 0.00            |

## USCG Casualty Reports--Engine Room Fires: 105 Cases

|    | I/O | Waterbody   | Case # | State | Fire Extinguished? | How? (Details)   | Injuries | Damages (\$) | Barrels Spilled |
|----|-----|---|--------|-------|--------------------|--|----------|--------------|-----------------|
| 1  | O   | Gulf of Mexico 12-200 Miles                           | 2      |       | Y                  | B-II extinguisher used ineffective, fire quickly extinguished by main deck firefighting hose   | 1        | 70,000       | 0.00            |
| 2  | O   | Intercoastal Waterway-Gulf                            | 48     |       | Y                  | The fire was put out without damage.   | 0        | 0            | 0.00            |
| 3  | O   | Dump Zone South of Alcatraz                           | 73     | CA    | Y                  | Fire extinguished within 5 minutes by vessel crew and bargeman with dry chemical & CO2 portable fire ext (5) and fog application of the deck washdown.   | 0        | 870          | 0.00            |
| 4  | O   | Intercoastal Waterway-Gulf                            | 75     |       | Y                  | Fire was extinguished within 1 hour.   | 0        | 2,000        | 0.00            |
| 5  | O   | Gulf of Mexico Coastal                                | 88     | AL    | Y                  | Chief engineer extinguished minor electrical fire by throwing breaker switch.  | 0        | 500          | 0.00            |
| 6  | O   | Gulf of Mexico Coastal/Straits of Florida             | 105    | FL    | Y                  | The fire was extinguished by vessel personnel and the vessel was able to return safely to port.  | 0        | 500          | 0.00            |
| 7  | O   | Intercoastal Waterway-Gulf                            | 35     | TX    | Y                  | Fire was contained in the engine room and extinguished with fixed CO2 system.  | 0        | 30,000       | 0.00            |
| 8  | O   | North Atlantic Ocean/48 NM East of San Salvador Isl.  | 26     |       | Y                  | Fire was discovered in engine room and completely extinguished by 0450 using fixed CO2 system and hand held extinguishers.   | 0        | 443,671      | 0.00            |
| 9  | O   | Caribbean Sea West of Bahamas                         | 41     |       | Y                  | The vessel's fixed equipment, a salt water fire hose station, was satisfactorily effective at extinguishing the fire.  | 0        | 240,000      | 0.00            |
| 10 | O   | Gulf of Mexico Coastal                                | 54     |       | Y                  | Fire extinguished after 30 minutes. Fire extinguished with four portable fire extinguishers. Engine room CO2 cord did not work and one of the portable fire extinguishers did not work. The oiler donned firefighting equipment and fought the fire. | 0        | 1,000        | 0.00            |
| 11 | O   | North Pacific Ocean Coastal                           | 61     |       | Y                  | Vessel experienced an engine room fire which was extinguished quickly.   | 0        | 0            | 0.00            |
| 12 | O   | North Atlantic Ocean Coastal/Cape Fear River Entrance | 99     | NC    | Y                  | Fire extinguished at approx 1640 by crew of dredge R.S. WEEKS.   | 0        | 5,000        | 0.00            |
| 13 | O   | Maroc Phosphore Berth 7/Jorf Lasfar, Morocco          | 47     |       | Y                  | 126' towboat was moored when a fire was reported in the port engine room of the towboat. The fire was extinguished by the crew.  | 0        | 1,000        | 0.00            |

## USCG Casualty Reports--Engine Room Fires: 105 Cases

|   | I/O* | Waterbody                                       | Case # | State | Fire Extinguished? | How? (Details)  | Injuries | Damages (\$) | Barrels Spilled |
|---|------|---|--------|-------|--------------------|---|----------|--------------|-----------------|
| 1 | O    | Gulf of Mexico 12-200 Miles                     | 50     |       | N                  | Fire burned out of control, crew abandoned vessel approximately 3-5 minutes later. Burned interior of vessel. Crew saw flames coming from E/R.  | 0        | 1,000,000    | 0.00            |
| 2 | O    | Block Island Sound                              | 80     |       | N                  | The six crewmembers unable to enter engine room to fight the fire, abandoned ship, & were rescued by CG resources. Tug & barge drifted & eventually grounded on Moonstone Beach, RI. (SCANDIA/NORTH CAPE)   | 0        | 17,750,292   | 19,714          |
| 3 | O    | North Pacific Ocean Coastal/Uganik Bay          | 83     | AK    | N                  | A fire started in either the galley area or the engine room which quickly burned out of control. Fire was not controlled with equipment that was used. Crew was unable to control fire and abandoned ship in appr. 3 minutes. The firefighting was hampered due to the captain being forced to retreat by smoke and heat while fighting the fire. | 0        | 350,000      | 8.93            |
| 4 | O    | North Atlantic Ocean Contig ZN/Lake Worth Inlet | 19     |       | N                  | Crew abandoned to a CG vsl. Fire extinguished itself due to fuel starvation   | 0        | 500,000      | 0.00            |
| 5 | O    | Caribbean Sea                                   | 62     | PR    | N                  | Vessel made fast to Ochoa facility while fire fighting efforts were attempted. Major marine casualty due to damage, engine room and entire superstructure were total loss. 1500 gallons of pollution.   | 0        | 20,000,000   | 35.71           |

|              |   |   |    |    |    |  |          |                   |               |
|--------------|---|---|----|----|----|--|----------|-------------------|---------------|
| 1            | O | Intercoastal Waterway-Gulf                  | 42 | TX | NS |  | 0        | 0                 | 0.00          |
| 2            | O | Gulf of Mexico 12-200 Miles                 | 46 |    | NS |  | 0        | 218,417           | 0.00          |
| 3            | O | Gulf of Mexico 12-200 Miles                 | 74 | TX | NS |  | 0        | 200               | 0.00          |
| 4            | O | Intercoastal Waterway-Atlantic/Biscayne Bay | 91 | FL | NS |  | 0        | 600               | 0.00          |
| 5            | O | Intercoastal Waterway-Gulf                  | 71 |    | NS |  | 0        | 0                 | 0.00          |
| 6            | O | North Atlantic Ocean/100 Miles Offshore, NY | 3  |    | NS |  | 0        | 500               | 0.00          |
| 7            | O | North Pacific Ocean                         | 11 |    | NS |  | 0        | 35,000            | 0.00          |
| 8            | O | Caribbean Sea                               | 86 |    | NS |  | 0        | 1,000             | 0.00          |
| <b>TOTAL</b> |   |   |    |    |    |  | <b>7</b> | <b>47,376,825</b> | <b>19,792</b> |

## Cost Estimates for Fixed Suppression Systems

| Example # | # of towboats involved | Small or large towboats | Dimensions of towboat (if known) | Coastal, inland or harbor | Type of FFES | Cost of installation of FFES | Shipyard costs (if separate) | Other costs (ABS/USCG fees) | Lost revenue or down time | Total per vessel |
|-----------|------------------------|-------------------------|----------------------------------|---------------------------|--------------|------------------------------|------------------------------|-----------------------------|---------------------------|------------------|
| 1         | 27                     | small                   |                                  | inland                    |              | \$121,000                    |                              |                             |                           | \$121,000        |
| 2         | 1                      | small                   |                                  | inland                    |              | \$45,000                     |                              |                             | \$16,000                  | \$61,000         |
| 3         | 1                      | large                   | 37000 sq. ft. engine room        | coastal                   | CO2          | \$78,500                     |                              | \$40,000                    |                           | \$118,500        |
| 4         |                        |                         | 3200 hp                          | inland                    |              | \$30,000                     |                              | \$35,000                    |                           | \$65,000         |
| 5         | 1                      | large                   |                                  | coastal                   | CO2          | \$49,000                     | \$18,000                     |                             | not included              | \$67,000         |
| 6         | 1                      | large                   |                                  | coastal                   | FM200        | \$55,000                     | \$15,000                     |                             | not included              | \$70,000         |
| 7         | 1                      | large                   | 98 foot, 2400 hp                 | coastal                   | FM200        | \$50,000                     |                              |                             | not included              | \$50,000         |
| 8         | 1                      | small                   | 1800 hp                          | inland                    |              | \$20,000                     |                              |                             | \$16,000                  | \$36,000         |
| 9         | 1                      | small                   | 4400 hp                          | inland                    |              | \$30,000                     |                              |                             | \$16,000                  | \$46,000         |
| 10        | 1                      |                         |                                  | inland                    | Halon        | \$20,000                     |                              |                             | \$16,000                  | \$36,000         |
| 11        | 1                      |                         |                                  | harbor                    | CO2          | \$70,201                     |                              | \$1,000                     | \$9,750                   | \$80,951         |

Average amount  
per vessel = \$68,314